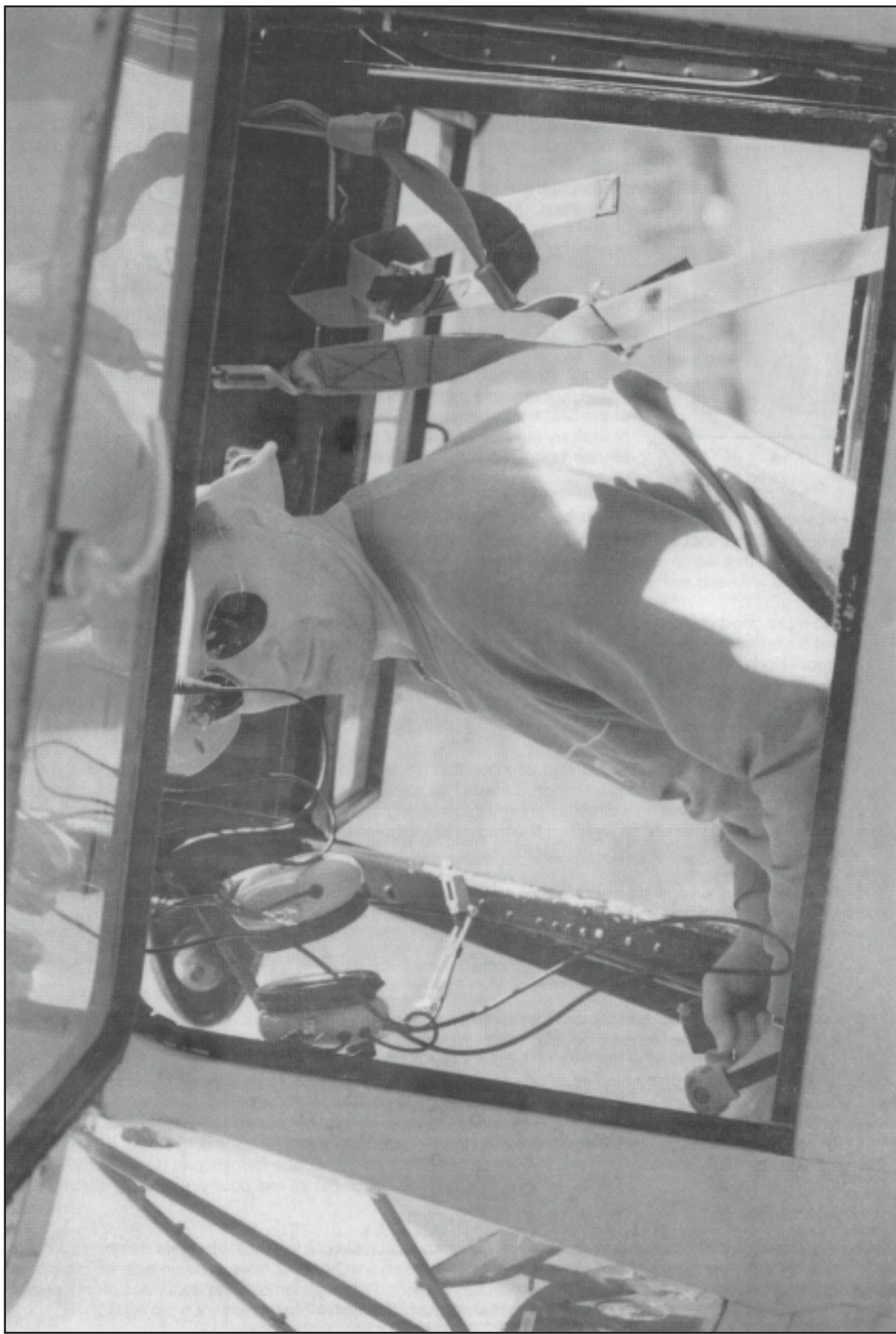


free flight • vol libre

3/94
Jun/Jul



LIAISON



I have heard through the grapevine, or probably said it myself, that SAC was not doing the right things and some of you probably believe that SAC does not do anything. I do not want to argue the point here. If you think that way, you probably have good reasons to do so. However, complaining achieves precious little. If you have a concern about anything that goes on with the association, drop me a line outlining your *solution* to the situation. My address is in every issue of *free flight*. I prefer a note or a fax rather than phone calls because I travel a lot and am seldom at home. If we can correct it easily or inexpensively, trust me, we will do it rapidly.

I commented in the last issue about our less than stellar safety record. I hope everyone has read George Eckschmiedt's report and given some thought to the matter. Fortunately, one member has taken a leadership position on this crucial issue. Ken Brewin is coordinating our safety program as part of the Safety & Training committee. By now, a safety representative will have been designated for each zone. This person's role will be to interface with each club safety officer to insure that we have a safety program live everywhere. Hot off the press is a totally new version of the SAC training manual. Titled "*Soar and Learn to Fly Gliders*", this book is the result of a lot of work by Ian Oldaker and his group and follows modern training practises. As the fleet becomes more sophisticated, training has to keep pace. Joan at the national office has orders for

two hundred books and will be able to fill any additional orders.

I trust that the recruiting for the 1994 season is going well. It is unfortunate but it appears that we have to grow or perish. I strongly believe that we have to put ourselves in a position to offer more services to our members and remain cost effective. To achieve that we have to increase the volume of members, rather than strictly via the price of the membership. In the next issue, we will keep everyone abreast of the progress every club has made in that regard.

And more good news! Just the other day I received a phone call from Milosz Zeminek. Milosz is a member of York Soaring and a student of business administration. As part of a university program, he and four other students will write, under the supervision of their professor, a marketing plan for SAC. This paper will deal with the critical issue of recruiting. I have expressed to Milosz my belief that his recommendation will have to have two tiers, if not three. A successful strategy must have both club level and national actions. I am sure that many of you have ideas on the topic. Please help Milosz help all of us. He and his colleagues can be reached at (519) 725-0013 or by mail at 64 McDougall, Waterloo, ON N2L 2W5.

In closing, I would like to bring to your attention that once again through the patience and diligence of our Training & Safety chairman and his committee, Transport Canada has waived the "five takeoff and landings in the last six months" rule (see page 20 ed). SAC will now direct its energy into insuring that Transport Canada does not enforce minimum towplane performance criteria that are so high that it would make obsolete the majority of our towplanes. I will keep you updated with the work of Chris Eaves and Herb Lach on this issue.

J'ose espérer que vous avez noté à la page 11 de la section "1993 reports", insérée au centre de la parution précédente de ce magazine, le rapport du statisticien de ACVV. Vous y constaterez que *cinq* des six premiers clubs au palmarès du trophée Roden sont du Québec. Ce concours annuel reconnaît les efforts des clubs quant à l'efficacité de leurs opérations et de l'utilisation de leur matériel. Félicitations à tous. Cela prouve que les clubs du Québec sont bien administrés ce qui est un signe fort prometteur pour l'avenir.

Nous voulons organiser une clinique de formation pour les nouveaux instructeurs. Cette session aura vraisemblablement lieu dans la région de Montréal cet été. Traditionnellement, les stagiaires se rencontraient le dimanche soir et la session débutait le lendemain pour se terminer le vendredi après midi. Cependant cette façon de faire éliminait tous ceux et celles qui ne pouvaient se permettre cinq jours de vacances pour cette activité. Nous voulons donc innover en offrant de scinder la formation en deux: une session théorique distincte de la session pratique en vol. Cette dernière pourrait avoir lieu du vendredi soir au dimanche soir. Quant à la session théorique, deux voies s'ouvrent à nous. Nous pourrions les faire en cinq soirées réparties sur une semaine ou deux ou prévoir une fin de semaine additionnelle pour le volet technique. J'aimerais avoir de vos nouvelles pour savoir combien de candidats désirent cette formation et quelle formule remplirait mieux leur besoins. Le mois d'août semble bien convenir à ce moment ci. Est ce vrai pour vous? Votre communication prompte sera un atout important.

Si la formation des nouveaux instructeurs est un item essentiel pour le développement de notre sport, il ne faut pas oublier ceux et celles dont la formation date de quelques années. L'ACVV peut nous venir en aide en organisant deux activités, soit un cours de recalcification de vos instructeurs ainsi qu'une session de mise à jour des techniques de formation. Cette formation durerait environ une journée. J'aimerais aussi connaître votre sentiment à cet égard.

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

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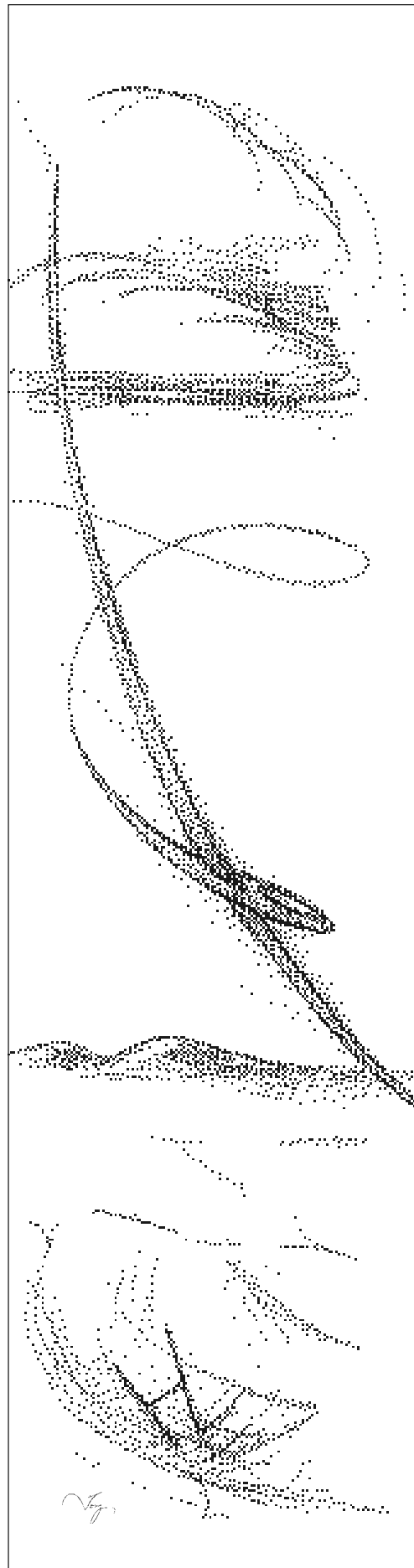
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Cover "A busy day at the office." This cover is a small thanks to all the tow-pilots out there making our enjoyment possible. Vancouver Soaring's Ejub Duric readies the L-19 cockpit for another launch.

photo: Renee Machat



rebutting the curmudgeon

The mediocre may pay the monthly bills now,
but it is the best who keep soaring's soul alive.
(a forceful response to the editorial reprinted in the 1/94 issue)

David Peppiatt, from the *NZ Gliding Kiwi*

THE CURMUDGEON rattles on about marketing soaring to the universal mediocrity of early middle-aged, lower middle income earners, presuming that those who have never demonstrated a talent for achieving above average success in their general lives will begin to do so the moment they step into their first glider. Bull! I have no wish to vilify the input of mainstream Mr. Average, without him no economy and few soaring clubs would survive. However, relying upon mediocrity as a basis for stability and growth of any enterprise invites inevitable decay. My use of the term 'mediocrity' is not used to derogate the value of the casual recreational pilot but to clearly separate me from the Ingo Renners of the world who are ten times the pilot I am.

All persons who take up soaring are seeking challenges, risk, and thrills. Local soaring provides that for a period but as the challenge ebbs so does the enthusiasm and interest – not of all but of many, as has been amply demonstrated by the constant reference to the declining numbers and membership turnover in our sport. As one becomes more competent at soaring the number of risks diminish congruent with the pilot's ability to learn to handle those risks, normally from his own mistakes. Interest level is maintained by maintaining the risk level, and that is done by extending the horizons of the initial challenge of flying by cross-country competition.

The survival of soaring worldwide relies upon attracting highly motivated success-oriented competition pilots, those who wish to go ever further and ever faster. They want the best of everything and because their success attracts sponsorship they can afford the best (at least such is the case in Europe), consequently sailplane builders are forced to improve their product. And who is the main beneficiary of those advances? Yep, your average weekend recreational pilot. You can bet that the curmudgeon, wearing his mediocrity like a badge of honour, isn't flying a Rhönsperber or Minimoa – he will be flying a machine which was designed expressly for those who he believes are little more value to any club than prestige.

I have noticed that we seem to spend vast amounts of energy trying to convince all who will listen that soaring is actually very safe. Rubbish! It is *potentially* a very dangerous pastime, which is one of its major attractions and can provide us with a steady influx of risk-starved, success-oriented, youthful high flyers. It is the potential for death and destruction which encourages the public to trot out to car races and enjoy the vicarious titillation of sailing at 30 knots plus in Southern Ocean gales, albeit from the TV chair. Soaring can never be absolutely safe, what a bore it would be if it were. It is this element of risk which, if marketed correctly, will prove to be the drawing card we so dearly need to bring money and people into our sport.

Technology is radically changing the nature of work, and traditional work is being supplanted by work that cannot be carried out by a machine. An obvious example of that is sport, which even today is a massive worldwide employer. The money which changes hands in the USA football, baseball, and basketball scene is probably greater than New Zealand's GNP. The vast amounts of cash which competitive yachting attracts is quite incredible when one considers that 15 years ago it was deemed to be as interesting to non-yachtsmen as watching grass grow – until we won the America Cup and the public had a new breed of hero. Sport can do nothing else but grow, but those that will attract the most money will be those that are marketed best which means selling the public on the idea that a particular sport is of vital interest to them. We can do the same as yachting provided we think outside the square. This will take time and a plan, including the identification and marketing of soaring heroes through regular competitions in all classes, by giving the sport more visual appeal for TV (GPS technology can do the same for us as it did for yachting coverage), and by exploiting the risk inherent in flying. Getting TV interested will get increased media coverage, with that will come increased public interest, and from that will come increased sponsorship and money. It all starts with competition and the ones who will gain the most are the clubs and the recreational pilot.

I do not presume to either encourage or coerce any recreational pilot to change his ways to take up the cudgel and compete. His right to float around within gliding distance of the field or on a comfortable cross-country is sovereign. I acknowledge that for the most part the recreational pilot is often the stalwart who fixes, organizes, sits on committees, and undertakes the host of tasks required to run a functional club. But in order for the sport to fly, to be vigorous and healthy and to grow, it needs both body *and* soul. The body comprises all you decent folk who are not interested in competition, while the soul is the Ray Lynskeys and all the other competition pilots who accept no boundary to their soaring horizons.

This editorial has been substantially condensed from the original to express the idea and fit this space. ed



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.

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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 ok in ASCII). All material is subject to editing to the space requirements and the quality standards of the magazine.

Prints in B&W or colour are acceptable. No slides please. Negatives can be used if accompanied by a print.

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 given in the magazine.

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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 épreuves de photos en noir et blanc ou couleur sont acceptables. Les négatifs sont utilisables si accompagnés d'épreuves. Nous ne pouvons malheureusement pas utiliser de diapositives.

L'exactitude des articles publiés est la responsabilité des auteurs et ne saurait en aucun cas engager celle de la revue **vol libre**, ni celle de l'ACVV ni refléter leurs idées. Toute personne désirant faire des représentations sur un sujet précis auprès de l'ACVV devra s'adresser au directeur régional de l'ACVV dont le nom apparaît dans la revue.

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\$28 outre-mer) veuillez contacter le bureau national à l'adresse qui apparaît au bas de la page à gauche.

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ON THE PRICE OF BICYCLES

I would like to comment on two items in the April/May 1994 issue of *free flight*.

The cost of sailplanes In the report on the AGM you make the comment that "hardly anyone is buying German fibreglass anymore with its stellar price tag." While it's true that fewer people are buying German sailplanes now, it is not really because of the prices Germans are asking but rather because of Canadians' inability to pay. This is a subtle, but important distinction. I don't think we can blame the Germans for our economic woes. Close analysis of pricing over the past couple of decades shows that German prices have barely increased by the rate of inflation. It is our relative drop in buying power which has made these fine sailplanes expensive. For example, my brother bought a Standard Cirrus in 1970. I recall that the price, completely equipped with instruments, radio, trailer, etc, came to about \$12,000. In German currency this was about DM 48,000 at that time. Today you could buy a similarly equipped ASW-24, a much nicer glider with significantly better performance for about DM 95,000 — a price increase of about 100%. Not bad for the 24 year time span and better equipment. So, let's put the blame where it should be — with ourselves.

By the way, in view of the fact that Polish wages are approximately 10% of German ones, it seems to me that the Polish sailplanes are overpriced, not the German ones.

Competition rules I was very interested in my friend John Bisscheroux's comments about competition scoring. I was glad to see that he took the light-hearted approach, something which is often missing in this debate! Unfortunately, John mixes up some of his facts. For example, neither the starting time nor aircraft type influences the scoring. Also, all-up weight is simply a technical and regulatory factor, having nothing to do with scoring.

I am somewhat amused by his comparison of competitive bicycling and soaring. Although I know very little about that sport I would be willing to make a small wager that competitive bicycling is at least as complex and rule bound as soaring. I seem to remember one particular incident involving a well-known Canadian racer who literally "bumped off" his closest competitor just before the finish line and subsequently was involved in litigation for years in Europe. This doesn't sound like "keep it simple, stupid" to me!

Yes, soaring is a complex sport, but that is why we love it. If it was simple, why do it? Most of the rule complexities are as a result of one thing — the need to eliminate the luck factor as much as possible. This is not necessary in bicycling since the conditions during a race are pretty well the same for everyone. But just imagine a bicycle race where the road surface and slope were constantly changing depending on the capricious whims of Mother Nature! I think we would see complexity added to the rules very quickly.

John charges that those taking part in soaring competitions as being "elitist". My Oxford dictionary defines "elite" as "the choice part, the best". If this is competitive soaring, then it seems to me we should all strive for it. Seriously, I don't think there is anything elitist about competition soaring. Anyone who is a competent pilot can join in, flying their own or club equipment. I am certain that competitive bicycle racing is at least as elitist as soaring.

Having said all this, I agree with John that we need to strive to keep the rules as simple as possible and much time and effort has been spent attempting to do just that. However, in a sport such as soaring, the rewards are roughly equal to the complexities encountered and successfully dealt with. That is why it never gets boring. In any sport, competition rules evolve naturally to meet the needs of those who compete. I appreciate John's contribution in this exercise. I think secretly he is an elitist (read "competitor") after all.

Ulli Werneburg, Gatineau Gliding Club

ANOTHER RESPONSE TO THE CONTEST RULES LETTER

John Bisscheroux's comments under the heading "Scoring Rules Out of Hand" in the last issue of *free flight* are worth consideration by all pilots.

It would be nice if competition rules were "simple" but the current intricacies reflect rules used by our keenest competition pilots in other countries and at world championships, plus local differences requested (or demanded?) during lawyering sessions following our Nationals. That's the way it is today, but it doesn't have to stay that way.

The present POST is a relatively recent addition to tasking and its rules are still being refined. For example, pilots have generally agreed that a pilot who completes a short flight should not get as many points as a pilot who covers 300 kilometres but lands just short of the finish. Now what we need is input from competition pilots to suggest to us how much of a points bonus a finishing pilot should get.

Also, our detailed competition rules were developed before computer scoring programs were written. We use computers only because this tool gives us a way of doing the calculations quickly and easily. Why not also use whatever tools are available in doing our flying. We have progressed from a variometer with a red and a green ball to the modern types plus flight computers — why not use whatever tools are available, even if they are spelled GPS? The "best" navigator may now be the one who is best at using GPS.

Perhaps we could simplify and demystify all the scoring comparisons by scoring one of the FAI classes at the next Nationals using several sets of scoring formulas and seeing

continued on page 18

BILLOWS, WINDSHEAR AND WAVES

Like fleas, big waves can have smaller waves upon 'em

Tom Bradbury
from *SAILPLANE & GLIDING*

MOST PEOPLE are familiar with the appearance of major wave clouds, especially the elegant lenticular bars so often illustrated in text books. There are a number of less obvious wave indicators, and some of these are described below.

Basic conditions for lee waves

The conditions which usually produce lee waves are:

- a wind of some 15 knot or more blowing across a ridge
- an inversion or very stable layer not far above the mountain tops
- a wind whose speed increases with height but whose direction remains fairly constant.

When all these conditions are met, waves are very common but wave lift may also be encountered when one or more of these factors is missing. If there is little or no windshear the wave energy propagates upwards but very little is reflected back to produce a wave train. Lack of feedback usually means that there is only a single wave. Single waves sometimes produce lift to great heights, occasionally up to the base of the stratosphere and sometimes much higher. It is likely that the energy is eventually dissipated as turbulence in the lower stratosphere. No useful wave energy is reflected back to produce a wave train.

Wave trains Wave trains occur when the wave energy is trapped within a sort of duct. The wave bars one sees on satellite pictures are a resonance effect produced when the wave energy is reflected up and down within the duct. Ducts are often formed when there is a marked increase of windspeed with height. These trapped waves usually develop their maximum amplitude in the stable layer or inversion above the mountain top. Higher up the wave amplitude gradually decreases. If there is a long train of wave bars at medium or low levels one is unlikely to make a very high wave climb.

Waves or billows? Figure 1 shows two types of temperature and wind profile. A wave day is shown on the right and an occasion of billows on the left. The right hand temperature curve (dashed line) shows a stable layer, centred near the 2 km level, sandwiched between two layers of less stability. The wind profile (solid line) shows the windspeed

increasing upwards to just above the 10 km level. Above 10 km the wind decreases and the temperature curve becomes almost isothermal. This change usually marks the tropopause, the base of the stratosphere.

The diagram on the left of Figure 1 shows an occasion when billows formed at very high levels. The temperature curve has no inversion until the tropopause is reached near the 10 km level. The wind profile increases upwards but has a particularly strong shear just below the tropopause at the level marked "B". This is where billows appeared in cirrus.

In Figure 2 the streamlines show a short train of waves at low level and a single bounce wave much higher up which generates a sheet of cirrostratus. The high level wave may have no obvious connection with the lesser waves low down and quite often the cirrus shows no sign of wave bars. This cirrus usually forms directly above the upstream ridge and streams downwind. The upwind end remains anchored to the ridge for several hours but the downstream end grows ever longer. After some hours the whole mass becomes detached from its anchoring ridge and blows away.

Billows Billows form when a shallow layer of air has both weak stability and a strong windshear. Weak stability makes it easy for small up and down movements to occur; the addition of windshear tends to amplify these oscillations within a shallow layer where conditions are favourable. This results in waves with a very short wavelength called billows. I sometimes think that "ripples" describes these waves better but we seem to be stuck with the term "billow". Unlike lee

waves the billows aren't stationary; they move with the wind and are aligned at right angles to the shear. This usually means they also lie at right angles to the wind direction. One cannot always see billows. High powered radar has detected billows in clear air where the moisture was insufficient to form clouds.

Ripples on sand Billows or ripples are not confined to clouds. A similar pattern can often be seen on a flat beach after the tide has ebbed. The shearing effect of water flowing across the sand produces ripples on the surface of the beach. Desert sand dunes also have ripples on them formed by the shearing effect of the wind.

When billows break The lower half of Figure 2 shows an enlargement of the cirrus cloud in the upper half. Two situations are illustrated. In the upper one the wind has only moderate shear and the billows are quite regular. In the lower one the shear is very much stronger and the billows are curled over like breaking waves.

The billows do not immediately break as would an ocean wave. They first start to curl up like a clock spring. These are known as Kelvin-Helmholtz waves after the two people who first described them. These K-H waves usu-

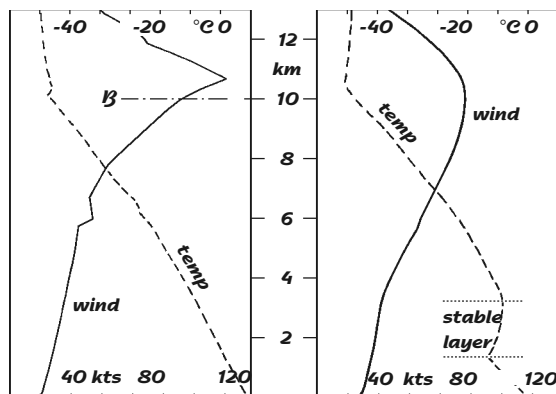


Figure 1 Wind and temperature profiles for billows (left) and standing waves (right).

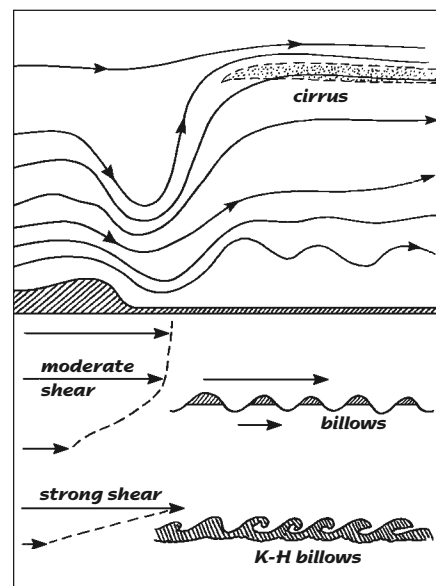


Figure 2 Streamlines for a one bounce wave at cirrus level (top) and enlarged patterns of billow and Kelvin-Helmholtz waves (below).

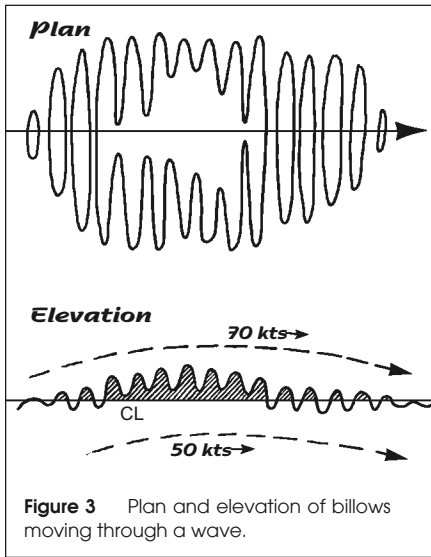


Figure 3 Plan and elevation of billows moving through a wave.

ally break down into turbulence. Almost all clear air turbulence is due to K-H waves which formed at a level of very strong vertical wind shear. They become visible when there is enough moisture for cloud to form. The sketch of K-H billows was taken from an actual photograph.

Figure 3 shows a plan view of billow clouds in the top half and a cross section in the lower half. As the wave crest is approached some billows merge to form a more solid piece of cloud. When the air starts to dry out on the descending side the billows separate again. In this case the flow lines show the windshear: 50 knot below the billows, 70 knot just above the billows. The horizontal line labelled "CL" for condensation level, shows how the billows

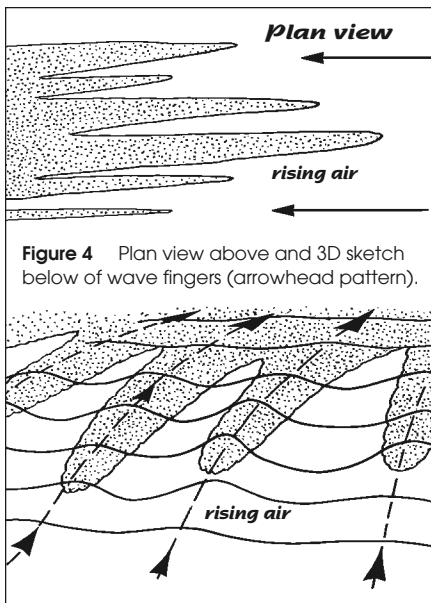


Figure 4 Plan view above and 3D sketch below of wave fingers (arrowhead pattern).

can grow as they pass through a wave crest and then vanish at the downwind edge. If the flow is almost horizontal then the billows retain their size and shape for many miles.

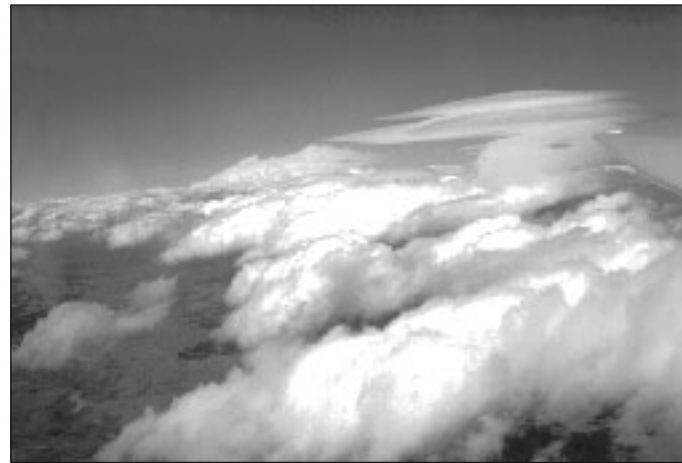
Wave fingers Figure 4 shows a plan view of these wave fingers; they are aligned almost exactly along the wind direction rather like streets in low convective cloud. The tiny altocumulus elements forming these fingers

look like very high level convection cells. The fact that cu streets are known to occur under wave clouds suggests that a similar mechanism might be responsible for these cloud fingers. However there is another possibility, illustrated in the lower half of Figure 4. This suggests that the rising air on the upwind side of the wave does not ascend in a smooth uniform curve. Instead there may be irregularities which form longitudinal corrugations in the wave flow. The cloud fingers first appear along these corrugations and only merge to form a regular sheet several miles downwind.

Ribbons of wave cloud During high wave climbs I have occasionally seen very long thin ribbons of cloud at levels above 20,000 feet and been surprised to find they were aligned along the wind. These ribbons undulated through the wave instead of forming a bar lying across the wind. None of these high level clouds is an infallible sign that there is, or will be, wave lower down. They merely suggest that part of the atmosphere is sensitive to wave development and soarable waves may appear lower down later on.

Low level signs Low level instability commonly occurs on wave days. Quite vigorous cumulus can grow on the rising side of a wave; some of these cumulus are able to cross the wave gap. When they do it is difficult to detect that there is a wave gap. Large, almost stationary, cloud free slots in the cumulus layer may be a sign of waves aloft. Irregular gaps with chunks of cu moving all the way across them are rather confusing. Behaviour like this will usually mean the wave pattern is not fixed but is drifting slowly downwind.

The photo illustrates wave boosted cumulus on the downwind side of a poorly defined



wave slot. The wind is blowing from left to right and the cloud tails point into wind. The cu is being pulled apart by the windshear. A lenticular cap over the cloud on the right shows where the wave crest is. The structure is illustrated in Figure 5. This shows bubbles of cu being distorted as they rise into the sheared flow on the upwind edge of the wave. When the air is dry and the wind very strong, the growing cu may be pulled into ragged shreds in under a minute.

Other wave trails Similar sloping cloud trails often develop on the downwind side of

wave gaps; some even show up under an almost 8/8 sheet where the wave is particularly strong. When there is a strong WNW wind the Welsh mountains are very good for setting off wave. Occasionally a well developed wave appears over the river Severn between Newport and Avonmouth. The first sign of it may be a semi-permanent tongue of untypically low cloud which develops SW of the Severn bridge and curves up into the 8/8 cloud layer above. Watched closely, it can be seen to change form; bits break off and are sucked up into the cloud layer only to be replaced by newer fragments upwind.

Warm sector wave Wide warm sectors often give good conditions for wave. The trouble is that the cloud is too often 8/8 with a dangerously low base. However, in summer the sun is often strong enough to lift the cloud base well inland and produce small breaks. Then these grow and the sky develops cumulus instead of stratus. At some of the best Welsh wave sites such as Talgarth, the breaks may be delayed until late in the day. It can be exasperating to fly the slopes near Hay Bluff under a lowering grey sky and hear that pilots from Usk have already found gaps and

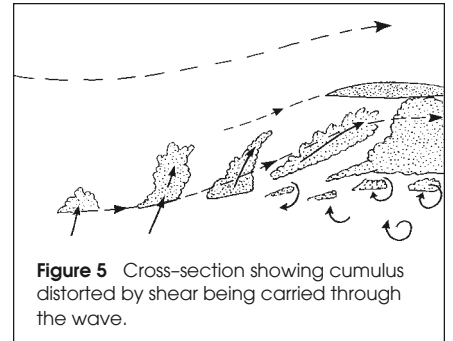


Figure 5 Cross-section showing cumulus distorted by shear being carried through the wave.

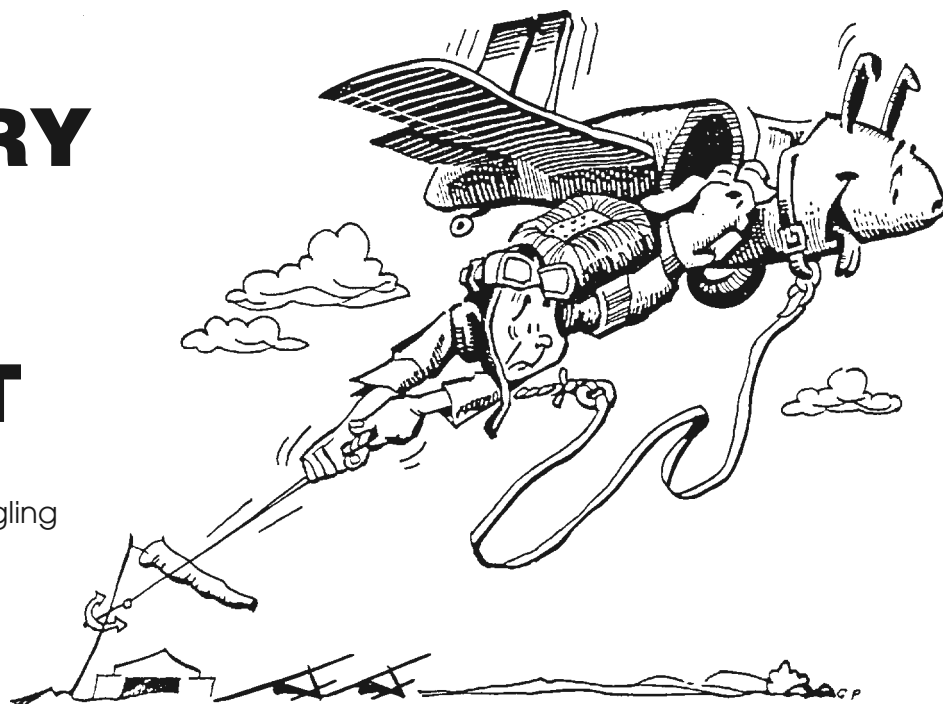
climbed high above the cloud. One of the best wave days which gave climbs to 20,000 feet near the Malverns brought the cloudbase down to the top of the Black Mountains, and Bristol Lulsgate reported drizzle with cloud almost on the deck.

Conclusion Most big waves are clearly marked by easily recognized cloud forms especially in or near the mountains. There are many other days

when lesser waves occur but these are often missed because the clouds are unfamiliar. One may blunder into these waves during a normal thermal flight and spend an interesting hour or three above the cloud tops. Billow cloud aligned across the upper wind flow shows that windshear has developed aloft; this may later make soarable waves develop lower down. Unexpectedly slow moving gaps among the low level cumulus clouds can be a sign of wave. In summer an 8/8 sheet of warm sector stratus may break up well inland to reveal a regular wave pattern where the mountains provide shelter.

CROSS-COUNTRY FLYING IS FUN, HONEST

some basics for the fledgling



Ian Oldaker

Chairman, Flight Training & Safety

THIS ARTICLE ATTEMPTS to show how pilots who are starting out on their careers as soaring pilots can improve their skills to the point at which venturing forth into cross-country flying can be a whale of a lot of fun. The article deals with flying skills and how to improve them with simple tasks around the club. Start now with some of the tasks suggested here, and next time you go to the club, get out the map and start planning! The article which appeared in the 6/93 issue of *free flight* described how to go about making a successful and untraumatic off-field landing. Try it, its fun!!

INTRODUCTION

Cross-country flying in gliders is without doubt a challenge to many pilots, an inspiration to others, and to many a relaxation from the everyday activities we enjoy on the ground. To some it is a wonderful release, and a successful flight under indifferent weather conditions can give a fabulous sense of accomplishment. To reach this stage requires a dedication to reach a high standard in all one's flying and to not settle for second best.

A good instructor will try to instil a sense of pride in the student's flying by requiring a steadily higher standard. You too can continue this after your first solo flight, to try and improve the accuracy of all your flying, and to learn new and better skills, for example to fly in strong winds and to learn better thermaling techniques, and, for your future cross-country flying, map reading. Learn these latter skills dual with an instructor.

In preparation for cross-country flying which will require you to recognize and to use lift to best advantage under stressful conditions, such as when low and away from a suitable runway, practise now to hone your skills. Don't

concentrate on one aspect only, to the detriment of other important points such as pilot decision making to get back to the field with adequate height, but work also to improve your handling and other skills. This will help you to stay in the thermal when needed, for example, without the danger of starting a spin because you allowed the speed to fall too much. You will be keeping a good lookout and instrument scan while improving your handling skills, all at the same time.

Becoming a good soaring pilot takes time, and can seem to be getting you nowhere sometimes. However, remember that we all started with mere gliding perhaps when we first started training, but that first thermal was surely a thrill! So too, the first time you venture away from the field will be memorable, and the thrill of returning to it with a long final glide is something to talk about. Most of us need help here though, and a small amount of instruction at this time will improve one's confidence measurably.

Attending a flying week at the club or visiting another club to attend a cross-country course are two ways of "breaking the bonds" that keep you close to home. Help from instructors is not that readily available as they are usually busy with basic training, but seek their help, particularly if the club has a suitable two-seater for cross-country flying. An alternative is to fly with an experienced pilot who will guide you, helping find lift and giving advice by radio.

This article deals with several aspects of cross-country flying, starting with improving your attempts at thermaling or soaring and ending with the off-field landing. When you began flying in gliders you may well have had some thermaling flights, but the instructor most likely made the decisions then. Now you have

your licence and you are improving your abilities; maybe you are eyeing a Bronze badge which is the entry level needed to attend one of the cross-country beginners' clinics offered across the country from time to time. Happy soaring, and soft landings!

LOOKING FOR LIFT

The best place to study the lift is from the ground! When preparing to take off, study the sky, and look for the formation of clouds, and whether other gliders are circling generally under them or more toward the upwind edge, and so on. This will help you locate the lift when you get airborne. Listen to other pilots as they can be an excellent source of daily information, but the private owners may well be up and away before you can ask them, so watch where they first circle after they release from the aerotow or winch launch.

You could always try starting with the lift that you flew through during the aerotow, that is if you remembered to mark where it is located! If you are winch launched you can probably do no better than to go to the "house thermal". This is often very close to the runway, and will already be well known to you! Also get to know the general area near the club so that likely sources of lift such as a gravel pit or rocky area, and sources of sink become known to you. This will help avoid the frustration of searching for lift as you return toward the club and a landing.

When in the air, circling gliders most often mark the lift, so go and join them. If possible fly to lift upwind of the club, so that if you fail to climb and "get away", you won't have to penetrate against the wind to get home. When lift is encountered and you decide to try and climb in it, circle and get comfortable with the thermal before trying to centre. Watch for other

gliders, and after marking where the strongest lift is located, start to centre it. The thermal will be drifting with the wind and there will be a tendency for you to “fall out” of the downwind side of the thermal; so watch for this, always remembering where the club field is and your glider’s performance in a straight glide against the wind. If the rate of climb reduces, try moving upwind. Often you will have to move some distance to get into decent lift again.

When we do not encounter lift during the tow, we will have to search for the lift. This can be a case of bumping into a thermal by chance, and such a thermal will be as good as any that you may encounter. However, flying cross-country demands that we develop a sense of where the next lift may be. So try to read the sky and the clouds now, to develop that important ingredient of the good soaring pilot, the ability to locate lift. This will enable you to find lift and to stay up under what appears to be a non-soaring day to others!

To help in this there are some “rules”:

- Choose a cloud and fly toward a definite point below it, and don’t let turbulence turn you away from it;
- Make wide circles under the cloud, to cover a large area of search;
- Remember that thermals get larger as they rise, so lift may begin to vary widely; persevere with searching for the best areas of lift;
- Don’t persist in looking for lift for more than one or two turns; watch for the dying cloud; lift will and does cease;
- When low down, ground clues must be used to locate likely lift since you won’t likely intersect the lift forming a cloud high above; this also applies on cloudless days of course. Learn to recognize these clues, and study the crops and other ground features to look for signs of lift sources, and areas of sink such as swampy ground.

EARLY ENCOUNTERS WITH LIFT

Your early flying will be characterized by lift that is flown into more by luck than by choice. You may be flying locally, that is with no destination in mind, other than to return to the club at the end of an hour. Whether you climb slowly or most efficiently or merely climb to the tops of the thermals and stay high does not matter much. However, for efficient cross-country flying it is necessary to maximize the climb rate, to leave the thermal when the lift starts to drop off, and generally to study how to improve one’s performance by adopting a positive approach to one’s soaring and hence piloting techniques. Soaring instructors can help a great deal here so seek them out and learn from them, if possible even during your early training, as they will set the tone for your later approach to soaring.

You may find that the rate of climb becomes less the closer you get to the clouds. The lift itself may be weakening but it is probably due to the fact that the

lift is not so well defined and you are no longer centred in the strong lift! Lower down the glider was being well banked and you managed to stay in the centre more easily as you concentrated purely on the climb. Now that you are higher up, you are (or should be) thinking about navigation and the location of the next likely looking cloud, and this detracts from the task of keeping in the strong lift.

The technique to overcome these problems is to fly in the best height band. This is the band of useable lift in which the pilot can maintain a good climb rate relative to the maximum strength of the thermal, and the top of the band is often less than the height just below cloudbase. The lower limit will be based on your experience and your confidence at contacting and climbing in lift low down. Here it helps to remember that during your training, you will already have had some good contacts at heights below your release height. Your experience and training at making an outlanding also will influence your decision about the lower limit to your height band.

During our early soaring flights there are temptations that detract from improving soaring skills. These are first, the desire to stay as high as possible and therefore to hang onto every scrap of lift, and second, to stay close to the club. The pilot who stays high will seldom practise entering a thermal from an area of strong sink, and the skills to quickly centre the lift and to start climbing efficiently will not be learned. The pilot who stays close to the club will become very uncomfortable when one day he or she flies out of range, and now begins to wonder if and how to “get back to the field”. These pilots will not develop good cross-country skills and their ground speeds will be low.

We should instead strive to explore the lower height bands where the lift is usually strongest, as shown in Figure 1. While lower down we can study the clouds ahead more easily. For example, lines of cloud (“cloud streets”) and likely strong clouds can be seen clearly from below whereas if the pilot is close to cloudbase, these features cannot be seen.

When first exploring your abilities at soaring further from the club, you may one day arrive at the club circuit and run into lift; now

you may wish to try and climb away. Under these conditions there are some additional “rules” that must be observed:

- don’t try to thermal below circuit entry height; this is typically 800 feet above ground, but for an experienced pilot could be lower,
- once in the circuit, never turn your back on the field, you may drift too far away and not be able to reach the field, and
- aim to land well within the field, not at the downwind boundary.

These rules are designed to safeguard pilots from drifting too far downwind to be able to make a proper circuit, and to avoiding conflicts with other pilots in the circuit. When lift is contacted and a positive climb rate is achieved, you will be above the circuit height and conflicts should no longer occur. However, the likelihood exists that you will drift downwind of the club as you climb. This requires you to judge when to break off the climb and to penetrate against the wind, back toward the circuit.

As your experience increases and you gain confidence you will probably want to explore further afield, and when you fly away from the club, will experience your first exciting moments of wondering whether you’ll get home!

Before you do this sort of flying, however, some extra preparations are suggested. First a flight plan is needed. This would include the thought that you will not get back before landing. This will put you into a different frame of mind immediately, you will find yourself much more relaxed, you will enjoy the flight more as you will be less concerned about returning to the club and you will enjoy the thermals more. This relaxation will in fact improve the chances you will make it back!

Part of the flight planning therefore must be to arrange for a retrieve — have the trailer checked and ready to go and connected to the car, crew on standby with car keys in their pocket or in your car (not in *your* pocket! — it has happened, even in contests). This may be a bit of a hassle at first but retrieving can be a lot of fun — meeting new people, the dinner and wine; cross-country is a shared event, not a solo show!

Learn the rates of climb needed for different wind strengths that are needed to make

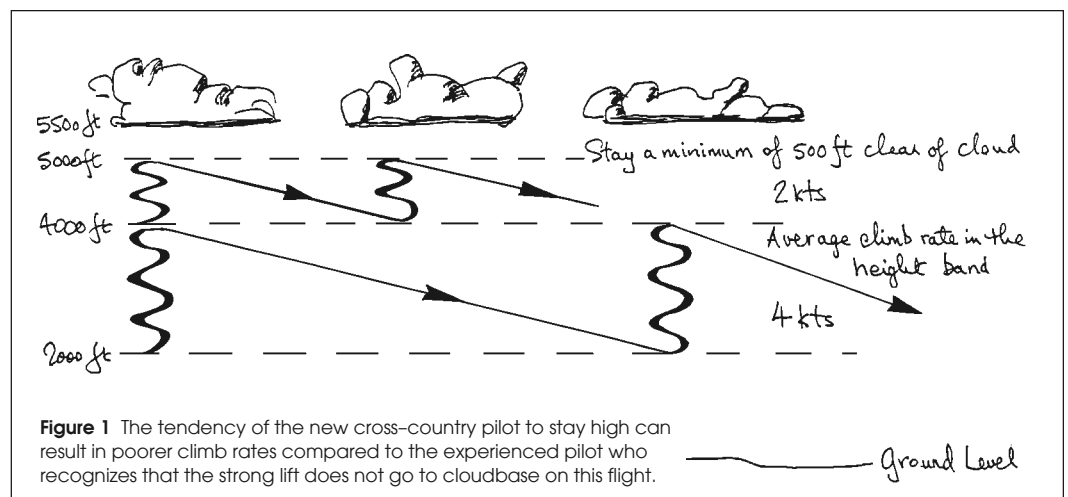


Figure 1 The tendency of the new cross-country pilot to stay high can result in poorer climb rates compared to the experienced pilot who recognizes that the strong lift does not go to cloudbase on this flight.

progress against the wind. A good rule here is to add half the wind speed to the speed for best L/D, for the best speed to penetrate against the wind. This works well for lower performance machines, but for higher performance sailplanes try to use a final glide calculator. These should be carried in the glider and used with a local map so that distances to fly can be determined and used. (A glide calculator which may be photocopied and assembled and the instructions for its use are given in the 3/91 and 4/91 issues of *free flight*.) It helps too, to mark distances on the map, such as circles at increments from the home field. The advantage of using the calculator is that if you get too low to make it back to the club, an outlanding can be contemplated early rather than when it becomes obvious later when getting very low. It is by making late and hasty decisions, when the club just isn't close enough for the proper circuit entry height, that accidents are most likely. (We call this "stretching the glide".)

If we recognize the risk of landing out, the safety of local soaring is improved. For example, during local soaring flights select one or two local fields that are close to and downwind of the club, and inspect them for suitability for an outlanding. Drive over to them after a flight where you selected them to confirm their suitability. Then later if you do get caught low, the business of selecting a safe field has already been done.

Those who develop confidence at using the lower height bands will be able to achieve faster cross-country speeds, and will feel less exposed to risks when gliding out of range of the club field. Good training and practise when flying dual will help develop good airmanship, or judgement, as well as soaring competence. So, take the opportunity to fly with an experienced pilot occasionally, and you will be pleasantly surprised at how your confidence and abilities will improve.

BUILDING ON YOUR ABILITIES

Dolphin flying has become known recently as one of the more important time savers in flying cross-country. Consider that one circle in a thermal takes about 25 seconds, at a speed of 60 knots a glider will fly just under half a nautical mile! If the glider can be soared by pulling up in lift rather than circling, the extra distance travelled, and therefore time saved, can be considerable.

An exercise that you can practise to get used to dolphin soaring is to climb initially in a thermal to a good height and then set off upwind. If you climb too high under the cumulus you will not be able to see the lift areas ahead, so break off the climb at least

500 feet below the bases (besides it is against the law to get closer than this margin). The task now is to see how far you can go without circling. You will have to deliberately pull up in the lift, perhaps flying an "S" pattern in strong lift areas, rather than circling, all the time penetrating upwind. Then increase your speed in the weaker lift and sink, according to the MacCready speed-to-fly ring on the variometer. Take along a map also, previously marked with distance circles and also heights needed to get back to the start of the circuit, or use the final glide calculator, to determine when you must break off the upwind run to return home. A typical method of marking a map to show final glide heights and distances from the club is shown in Figure 2.

On successive flights reduce the margins progressively, so as to arrive back at the field with sufficient height for the circuit. You can reduce the margin as your confidence in the glider improves.

Another exercise you can practise without getting very far from the club is to fly very small triangles, say up to 25 nautical miles in size. Not only does this kind of practise make for an interesting flight but is excellent for developing cross-country flying

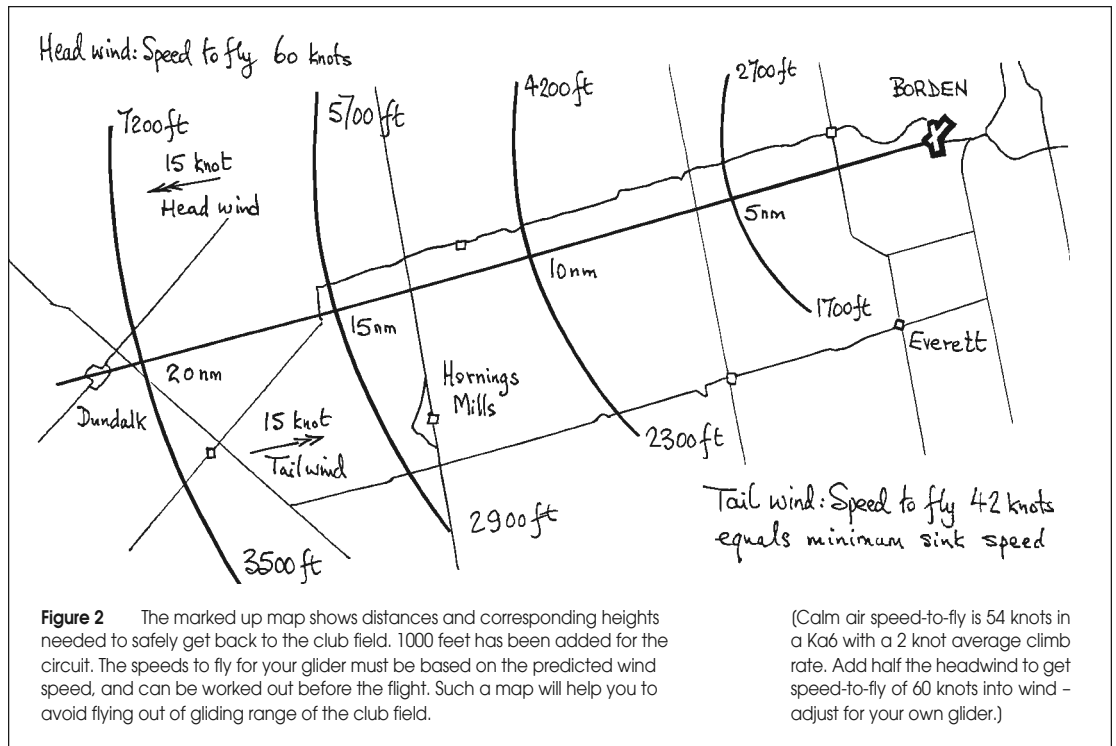


Figure 2 The marked up map shows distances and corresponding heights needed to safely get back to the club field. 1000 feet has been added for the circuit. The speeds to fly for your glider must be based on the predicted wind speed, and can be worked out before the flight. Such a map will help you to avoid flying out of gliding range of the club field.

(Calm air speed-to-fly is 54 knots in a Ka6 with a 2 knot average climb rate. Add half the headwind to get speed-to-fly of 60 knots into wind - adjust for your own glider.)

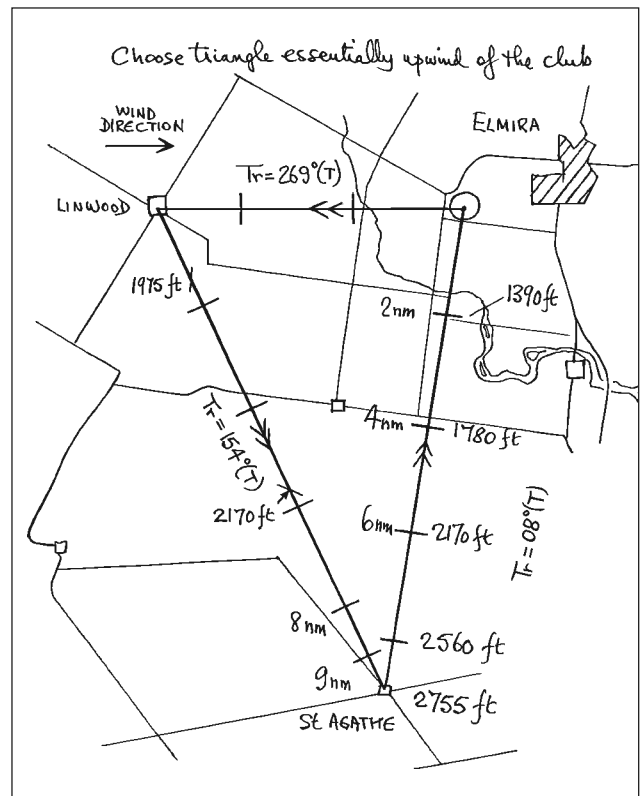
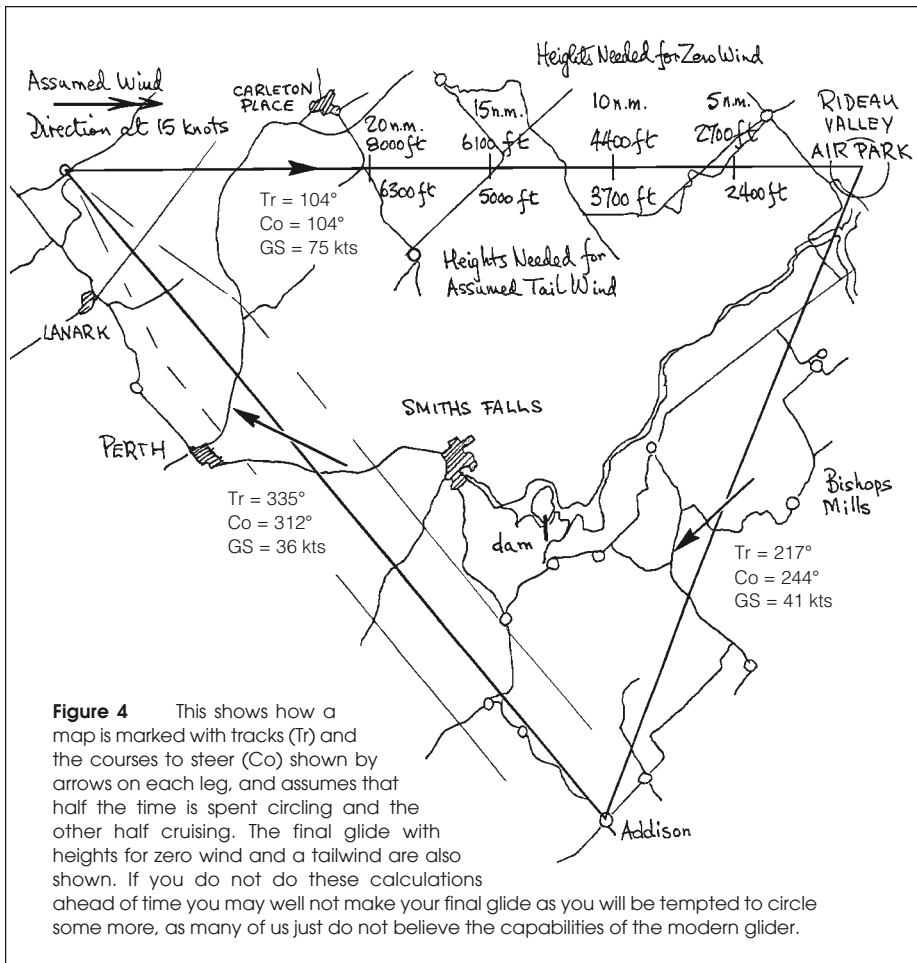


Figure 3 A typical small triangle for practising cross-country flying locally. The heights needed to reach the club from anywhere along the triangle are marked along the route, and include a 1000 foot margin for the circuit. The height required for a final glide from the far turnpoint is easily achieved in a single thermal on an average day. Climbs much higher than this are possible on good days, so modify the small triangle to suit the expected conditions.

skills. In this exercise you are never out of gliding range of the club, greatly reducing the chances of an outlanding and therefore the mental stress on the pilot! Figure 3 shows



a marked up map in which a typical small triangle is set out.

For your own first attempts, choose small triangles, making allowance for the wind by choosing turnpoints upwind of the club. You can of course use the clubhouse as one turnpoint. Turnpoints must be small, easily identifiable objects such as a road intersection, a bridge (one end if it's large), or a prominent building. You could even practise photographing these in later flights but make sure you talk to the club's Official Observer to get expert advice on how to do this. Many badge flights have been disqualified due to poor turnpoint photos.

Before you fly around the triangle, estimate the time you will need to complete the course, making a rough guess of your average ground speed. Remember here that your glider will cover say 22 times the height lost if it is a 1-26 flown at its best L/D speed between thermals. This translates into 22 km for a height loss of 1000 metres or 3281 feet, quite a long distance! Looked at in this way, travelling even a moderate distance in a glider does not seem too daunting.

When you have completed a couple of these exercises, evaluate your own performance. Did you achieve your predicted speed, or did you circle in every bit of lift and thereby lose a lot of time, did you arrive back at the club with height to spare, and so on? You might be able to go around more than once on the same flight, allowing you to compare techniques. For example, try to use only the

strongest lift on a second try, and compare your times. If you climb high enough at the start, try to go around without circling, and use the MacCready ring to set your speeds as you fly through areas of lift and sink. In lift you may be tempted to circle, but try not to! If you chose the turnpoints well, you will always be within gliding range of the club, and you can break off the task at any time if you get low.

Practising in this way allows you to see how and what is needed to get your average speeds up to those needed to be able to attempt a larger task. And it's fun to get another club pilot to fly the same course. Attending a cross-country clinic helps too, but these exercises can be a lot of fun, and they too will allow you to improve your abilities as a soaring pilot.

MAP READING

Here we enter the arena of the true cross-country pilot. Map reading is not that difficult but it can be frustrating when first attempting to simultaneously thermal while trying to orient the map. The first requirement is to have the map folded correctly so that the area of interest is folded out, and the size of the folded map is not so great as to make flying difficult. This sounds self-evident, but one could forget to do this before takeoff, and then find that folding the map in the air is virtually impossible! Learn now how to fold the map, and how to orient it in the cockpit for easiest reading. It helps to cut the excess off the edges. However you may have

a map such as a VFR navigation chart with a scale of 1:500,000 which is already folded. The folds tend to be awkward for a glider cockpit, and you may wish to redo it!

One way to handle such a map is to first open it fully, then to cut off areas that are not going to be flown over. Then fold it in half, parallel to the bottom edge, so as to leave the desired face of the map outward. Now fold it like a concertina into eight sections. This should serve you well for most cross-country flying, as the map can be opened like the pages of a book. With some practise at using the map and flying different courses, you may wish to cover the map with a plastic film, and to fold it differently.

Using an easily erasable pencil, draw the triangle or other course you wish to fly, show the compass courses along each leg, allowing for the predicted winds (though you may not get to this stage until you have been to a clinic), and then add the height and distance numbers for the final glide. The map is now ready for you as it has the minimum vital information on it. An example of a course is in Figure 4 as it would appear on the map. Studying maps and typical courses during the winter is time well spent. It saves time later, as you will be already familiar with the areas around the club, the features to look for, and you will have a good idea of how far away local towns and other landmarks are.

Learn how the features on the map are represented, and then identify how they look from the air when you go flying next. Remember that features are much more difficult to see when in cloud shadow and when the visibility is poor. Also learn the areas of restricted and controlled airspace, and respect them. We are allowed to penetrate certain of these areas and doing so is not difficult, but learn the radio requirements and how to use this airspace. Good airmanship is a prerequisite of course, as we can't always assume the other pilots in the area, who may be under radio control, will see us.

Elevations shown on maps are height above mean sea level. As a new glider pilot you may have been used to setting the altimeter at zero when learning to fly, in which case the altimeter was showing height above the club field. This is of no use if the ground where you intend to land is at a different height above sea level! Therefore you now will have to get used to setting it at field elevation, and the altimeter will now show your height above sea level. This is important particularly if serious cross-country flying is contemplated. Note that the heights shown on the figures in this article are heights above ground, and you will probably mark your final glides and other heights, as height above sea level! Therefore you will now have to practise subtracting the map heights from your altimeter reading to obtain the height above ground. This isn't all that earth shattering, as I trust you will be judging your final heights above ground by reference to trees and other ground features, and not by reference to the altimeter!

Right, now you have some tasks to practise around the club. Try them, and discuss with others your first successes and failures; share as we learn from our experiences. •

Jim Wallwork

combat glider pilot

Herrie ten Cate
SOSA

FIELD LANDINGS are something most of us try to avoid. For Jim Wallwork it was his speciality. But then again, that's what combat glider pilots were trained for. After reading about Mr Wallwork's military gliding career, I decided to pay him a visit at his home in Ladner, British Columbia. He had after all flown in four famous combat glider operations: the invasion of Sicily, the Normandy Invasion, the Battle of Arnhem and the Crossing of the Rhine. Having only spoken on the phone, I expected to meet a geriatric old vet of 74. Instead I met a man who doesn't look a day over 60 and can remember what he did last week better than I can.

50 years ago this June, Jim Wallwork was a young British glider pilot who took part in probably the most famous combat glider assault of all times: the D-Day attack on Benouville Bridge over the Caen Canal in Normandy. After the war, the bridge would be renamed Pegasus Bridge in honour of the British airborne soldiers who helped liberate Normandy. In Jim Wallwork's own words, "It was a rather heavy landing, in a rather rough field, at a rather rough time of night." Probably a bit of an understatement if you think the Horsa glider was the size of a Dakota and carried 30 fully armed infantrymen.

The actual attack started at a few minutes before 11 pm on the night of June 5th. Six Halifax bombers took off from Tarrant Rushton Airfield in southern England with six Horsa gliders on tow. Their objective would be the Benouville Bridge and the Ranville Bridge which were about six miles in from the French coast. The strategic bridges would be needed to link up the British Sixth Airborne Division which had dropped inland and the forces which were hitting the Normandy Beaches.

Jim Wallwork considered the Horsa a fine combat glider to take into Normandy. It was a high wing glider with side by side seating for the pilot and copilot. According to Jim, the Horsa had excellent visibility and was easy to manoeuvre. "With full flaps at 45 degrees, the Horsa would come down like an elevator. It was really quite something." Jim would use the Horsa's manoeuvrability and his own piloting skills to put the Horsa down on the money.

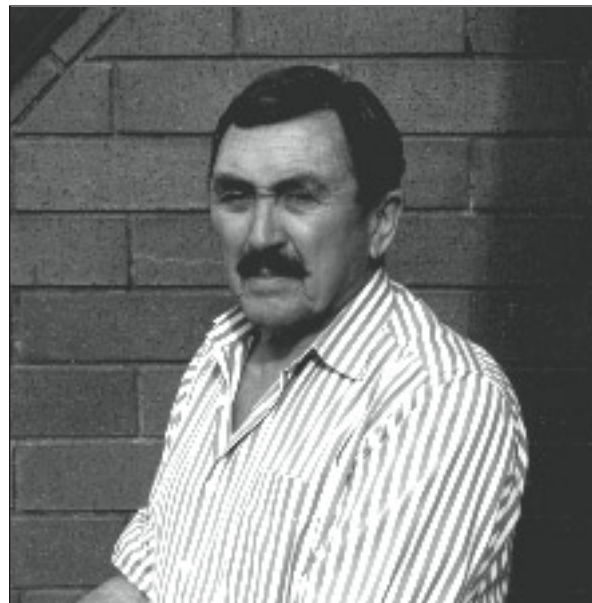
After crossing the English coast near Worthing, the tugs and their gliders flew for about an hour and a quarter at an altitude of between 4800 and 5600 feet before reaching the landing zone. They weren't very worried about encountering German flak because they crossed the French coast through a narrow corridor where German air defences were practically non-existent.

The six gliders pulled off at six minute intervals and headed for the small fields beside

the two bridges. And to throw the Germans off the real target, the Halifax bombers flew onwards to a cement factory in Caen and dropped a few dozen small bombs. Gliders one, two and three landed at Benouville Bridge (the Pegasus Bridge) and gliders four and five landed at Ranville Bridge. Glider number six was released at the wrong point. But that didn't stop the pilots from landing beside another bridge five miles away. Even though it was the wrong one, the soldiers from the Oxford and Buckingham Light Infantry took it anyway, and these troops later joined their comrades at the other bridges.

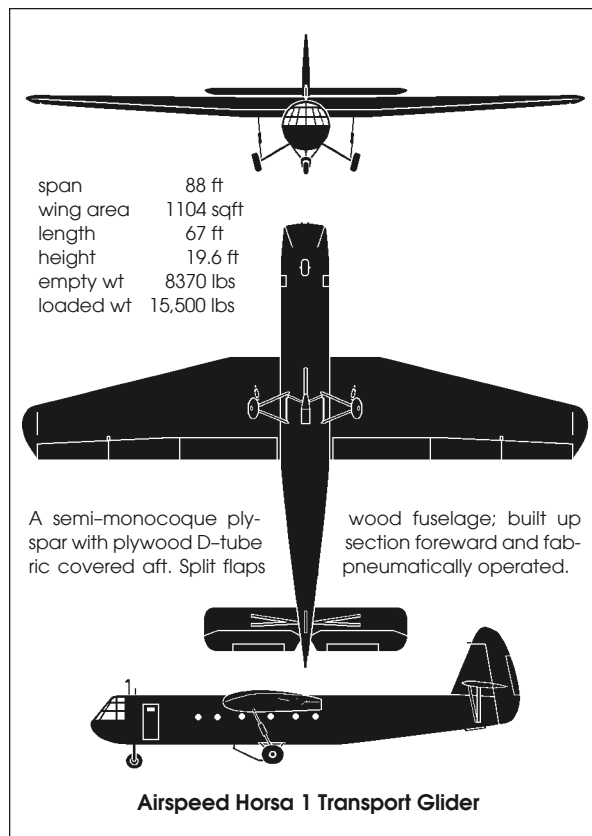
Jim Wallwork was flying the number one glider in what he calls "A dream operation, a real classic. We landed with complete surprise and took the bridge in a matter of minutes." But Jim and his copilot didn't walk away from the landing unscathed. They put the Horsa into the bridge embankment at the end of the field because they were worried about gliders number two and three which were coming in behind them. The impact with the embankment put both pilots through the perspex. The copilot suffered a twisted knee and broken ankle while Jim thought he had lost an eye. As it turned out, he had cut his forehead rather badly and the blood had filled his eye.

Although he was bruised and injured, Jim spent the next few hours carrying supplies and ammunition from the glider up to the troops on the bridge. When a German tank appeared on the scene, Jim was sent back to look for some anti-tank weapons which were supposedly somewhere in the wreckage of the glider. Still stunned from the landing, Jim used a flashlight to hunt for the weapons. A short while later he heard what sounded like a woodpecker working on the Horsa's wooden fuselage. The woodpecker turned out to be a German soldier firing at the flashlight. He turned off the light and scurried back to the bridge without the weapons which it turned out were never loaded on the glider in the first place. In any case, the British soldiers didn't need the weapons to take out the tank.



After the landing, Jim's orders were to return to England as soon as possible. He wasn't to stay and fight with the troops but return in case further glider landings were needed to reinforce the troops. As it turned out Jim made it back to England where he spent a few weeks recovering from his injuries before returning to his unit. He still had Arnhem and the Rhine Crossing ahead of him. Jim was awarded the Distinguished Flying Medal for his role in the attack on Pegasus Bridge.

But the assault on Pegasus Bridge may never have happened if Jim Wallwork and his fellow glider pilots hadn't passed a very important test in February 1944. Jim was among a group of 12 fellow pilots, six crews in all, who were



transported to Netherhaven Airfield on Salisbury Plain. There, they found six Horsas and six towplanes waiting for them. They also found their Commanding Officer and a rather large group of menacing looking Army and Air Force brass. They were told to take off, climb to 4000 feet over Banbury village and release at one minute intervals. Gliders one, two and three would do right hand circuits and land in a small triangle, marked out with tape on the airfield. Gliders four, five and six would do left hand circuits and land in another small triangle. What the pilots didn't know was that the brass wanted to know if large gliders could be put into small fields just like the ones beside the target bridges. Well, the pilots passed the test with flying colours much to the delight of their CO. The feat however wasn't good enough for one officer who said: "if they're so good, let's see them do it again." A short lunch break was organized before Jim and his fellow pilots repeated the exercise flawlessly one more time. A few months later, Jim and his fellow pilots would be landing their gliders in small fields very close to the ones they practised on at Netherhaven.

Jim's flying career started when he decided to get out of the PBI (the Poor Bloody Infantry) and move into something a little bit more exciting. The RAF was short of pilots and he was accepted for pilot training. His CO wasn't too thrilled at the thought of losing him, so he sat on the transfer. By the time the papers were shuffled, it was too late for Jim to become an air force pilot. But as luck would have it, he received a call a few weeks later inviting him to join a new Glider Pilot Regiment. Jim went through basic pilot training where he learned to fly small single engine aircraft like Tiger Moths and Miles Magisters. He then learned how to fly the Hotspur, a smallish military glider with tandem seats for the pilots and room for eight combat troops.

After getting his glider wings, Jim was posted to North Africa to prepare for the invasion of Italy. He would eventually fly an American Waco Glider into Sicily — an operation which proved to be deadly for many of the pilots and troops involved. Communication problems meant that a large number of the gliders were released too far from the coast and were forced to ditch in the Mediterranean.

During the months of training in North Africa before the assault, Jim would occasionally thermal the Waco in strong lift close to the airfield. Soaring wasn't exactly something British glider pilots were trained for. Getting the glider down and getting it down quick were the main priorities. Jim flew the Horsa into both Normandy and Arnhem before trading it in for the Hamilcar. This rather large and ugly glider was even equipped with a machine gun to take out any opposing forces in the landing area. The Rhine Crossing was Jim's last combat glider operation of the war.

After the war, he worked in England for a few years before immigrating to Canada, where he is now happily retired. Jim plans to attend the D-Day 50th anniversary ceremonies in Normandy this June. After all these years, he still carries a faint reminder with him from his combat flying days. It's a small scar on his forehead from his landing at Pegasus Bridge. Jim says he hardly notices the souvenir except once in a while when it starts to itch. •

A tale of two landouts

sort of interesting but it doesn't prove anything

Walter Weir
COSA

1

IN THE SPRING OF 1993 one of my friends landed out 30 miles north of the Sequatchie Gliderport near Chattanooga, Tennessee. I accompanied his partner on the retrieve. We were met by the pilot at the turn-off from the highway and he warned us that the owner of his landing field, whom he had not yet met, might be hostile. The pilot had been told by a neighbour that a female hang glider pilot who had landed in the same field two weeks before had been threatened with a rifle.

Sure enough, as we entered the farm lane we were met by the farmer, his clothes covered with blood (turned out his cow had just given birth) and a rifle over his arm. He said that the glider had done irreparable damage to his four inch alfalfa crop and that our retrieve car and trailer were going to make it worse. He enquired as to whether "you people do this sort of thing all the time — just plop down on somebody's property without making prior arrangements?" He had already phoned for the sheriff. During the ensuing discussion the farmer was patting the rifle in the crook of his arm, our driver was feeling for the handgun he kept in the glove compartment between the front seats, and I was scrunching down to make myself as small as possible. Every argument and persuasion we could think of was used to try to change his mind about the "damage" but without success.

When the sheriff and his deputy arrived things calmed down a bit and it was decided that for a fee of \$100 paid to the farmer the trailer could be driven onto the field and the glider removed. Afterwards no marks could be seen in the alfalfa.

This episode made a great story and was the subject of lively discussion at the gliderport for several days. The following weekend a case of beer was raffled off among the members and the \$100 profit was given to the angry farmer's victim.

2

ON THE FIRST DAY of the national contest in Swift Current, Saskatchewan last year I made a wrong turn somewhere and was faced with an inevitable landout. Knowing the country was sparsely populated, I scanned around in all directions for a hospitable field. I finally decided on a prosperous looking farm with quite a few buildings, three vehicles in the driveway and a fairly decent looking gravel road accessed by a short driveway. I landed

in a ploughed field close to the driveway and came to a very rapid stop in the soft ground. It had been raining quite a bit during the preceding few weeks.

I scouted around the house, which was locked, and all the outbuildings, but nobody was home. The three vehicles were unlocked, and all had keys in their ignition. I thought briefly of using one of them to get to the next farm but the idea immediately produced a mental picture of me being marched off to jail by a Mountie. The episode of number 1 had occurred only three months before.

And so there was nothing for it but to start walking down the gravel road. Not a single vehicle passed. No other farm was in sight. After twenty minutes I came to a side road where I could see another farm in the distance, but the road did not look well travelled and I decided to stick with the main road rather than face the possibility of a blind alley. After another half mile my road turned left ninety degrees but still no farm in sight.

I saw a deer and a Swainson's hawk. Finally, after about an hour, a pickup truck came toward me. The driver said he had seen me go over his place pretty low and he knew I wasn't going to make it to Regina and after thinking about it for a while had decided to come down the road to see what was going on. He took me to his farm and let me use the phone. When my wife Barb arrived with the trailer he came to help. We tried to pull the glider out of the field but the rope kept breaking due to the soft ground. Finally he used his four wheel drive to place the trailer in front of the glider and we were able to disassemble, load the trailer, and pull it to the road.

Near the end of this hour and a half or so of hard work the owners of the farm returned home. I told them how I had picked their farm to land and how disappointed I was that nobody was home. They said "Didn't you see the keys in the pickup and the two cars?" I said that I had but I thought I might get in bad trouble if I borrowed one.

They looked at each other in disbelief, trying to stifle their amusement at the city slicker from Toronto who didn't have enough sense to drive instead of walk.

It turns out that everybody either leaves their house open or keys in a vehicle in case someone is stranded. This is especially important in winter when being stranded with a disabled vehicle could mean the difference between life and death on the lone prairie.

And that's the end. I told you it doesn't prove anything. •

DOING IT RIGHT

From 1967 to 1986 Schweizer aircraft produced more than six hundred 2-33 gliders. Its rugged construction, easy flying qualities and reasonable price made it a favourite with gliding clubs and schools across North America. Like many small general aviation aircraft, the 2-33 is now only in limited production and the current alternative training gliders represent large investments which many clubs are reluctant to make. The increasing age of the 2-33 fleet will undoubtedly make maintenance of the aircraft more demanding and more of a concern to organizations who choose to continue using this type of aircraft.

The Air Cadet League of Canada is a large operator of the Schweizer 2-33 and their aircraft maintenance program has been designed to allow for safe use of this model for many years to come. The main base for the Air Cadets' central region aircraft is CFS Mountainview located near Trenton, Ontario. Major Ernie Sutton is responsible for the maintenance of both the gliders and Bellanca Scout aircraft that are used as towplanes. He and Dave Wood are the two aircraft maintenance engineers who look after the 15 gliders and 8 tow aircraft that make up the central region's Air Cadet fleet.

Their gliders vary from 4 to 26 years of age. Each ship accumulates approximately 200 hours of flight time each season. Air Cadet gliders are used for both introductory/familiarization flights and regular flight training. To ensure all cadets get their scheduled rides, flights are brief but very well planned. The rigorous schedule of familiarization flights and regular flight training results in a fairly steady rate of flight cycles for each aircraft — about 5 landings and takeoffs per hour.

Regular maintenance ensures a high rate of serviceability for all the aircraft in the organization. Gliders are serviced according to the manufacturer's 100 hour inspection schedule. The rugged construction of the aircraft means that very little repair or replacement of parts is required during the course of normal flying operations. During the flying season there is seldom any unscheduled maintenance that is required on the gliders.

A unique aspect of the Air Cadet glider maintenance program is the Depot Level Repair which is carried out on each aircraft every seven years. This program, adopted from the military, requires each glider to be stripped and completely inspected from nose to tail. During the winter months the Mountainview staff of aircraft maintenance technicians increases from two to twelve. The fuselage and control surface coverings of aircraft involved in the DLR are completely removed and components are inspected using techniques such as X-ray, liquid dye penetrant and visual inspection. These techniques have helped the maintenance engineers to discover corrosion in some difficult to inspect areas of the welded fuselage tube frame as well as cracking in some of the wing outriggers. Mainplanes sel-

dom require any more attention than the occasional replacement of dive brake hinges, although they are given the same intensive inspection as the fuselage and tail sections. Any problems that are discovered are remedied by the repair or replacement of the damaged component.

After being thoroughly inspected, the gliders are reassembled, and all bare metal surfaces of the fuselage structure are repainted and prepared for the application of fabric and dope. Hardware such as bolts, nuts, control cables and pulleys are replaced if wear has become excessive. The fibreglass nose section has all its paint removed to ease inspection and allow for easier application of the new fabric covering on the rear of the fuselage. The process of recovering with fabric is a real art and the Mountainview technicians put in an effort that leaves the finished gliders looking as if they had just been rolled out of the factory doors.

During the winter months the large World War II era hangar housing the Mountainview Air Cadet operation is crammed full of aircraft. It is not unusual to see four or five gliders in various stages of disassembly at any one time. All types of aircraft servicing takes place in the building including sheet metal fabrication, fibreglass construction, electrical wiring and dope and fabric work. In addition two or three Scout aircraft will be undergoing similar types of inspections. The high level of activity continues until about the end of March when the aircraft are expected to be ready to begin flying.

Because of the specialized nature of their work the technicians at Mountainview have made a number of minor modifications to glider aircraft to improve inspection and maintenance. Two small plexiglass windows installed in the turtledeck allow easy visual inspection of the wing attachment bolts without having to remove any fasteners or coverings. A special inspection panel installed in the nose section provides simple access to the forward tow hook to inspect for any damage to that particular component and the surrounding structure. New interior panels of durable, dent resistant plastic have replaced the original panels which have been severely damaged over the years.

Well planned and executed maintenance provides the Air Cadet pilots with a fleet of aircraft in which gliding can be carried out safely and reliably. The system of maintenance found at CFS Mountainview is very intensive and therefore difficult for many civilian clubs to duplicate but it does stand as a model to work towards. With Depot Level Inspections, regular 100 hour inspections and a source of new parts still available from the manufacturer, the Schweizer 2-33 should be able to quite capably carry out its flying duties for the Air Cadets for many years to come.

Jim Trevisan
Rideau Gliding Club

† ALBIE POW

It comes to everyone, but the anguish is for those who remain. "Albie" Albert Mowat Pow passed away in early March, never having fully recovered from a heart attack of a couple of years ago. If there was a Canadian Soaring Hall of Fame, his name would figure prominently in it.

Starting with model aeroplanes as a schoolboy, he moved to gliders and by the early 1960s had become Canadian gliding champion. He flew for Canada in the World Gliding Championships, in Spain in 1952 and in England in 1954. He finished third in the National contest in 1955, flying a 1-26, beating many others who were flying higher performance gliders. He was a crew member at the World Gliding Championships in Argentina in 1963, in Poland in 1968, and at Marfa, Texas in 1970. In 1953 he set a new Canadian distance record, flying a Lawrence glider 256 miles from Swift Current, Saskatchewan to Ray, North Dakota. He also held three other Canadian distance records prior to that flying an LK-10 solo.

Having worked at DeHavilland during World War Two on Mosquitos and Tiger Moths, after the war he became a partner in a woodworking business in London, Ontario, flying gliders at London and at Brantford.

Moving to the Barrie-Orillia area, he worked on boats and repaired light aircraft. For the past 25 years he lived in St-Lazare, where he had a small workshop. He was a consummate craftsman, and his aircraft restorations were truly works of art. A modest, warm-hearted man, he had the respect of all who met him, and was loved by many. Dear Albie, rest in peace.

Bob Gairns, MSC

AN EARLY START FOR A CHANGE

Imagine the following: hangar doors that are opened electrically, concrete aprons and taxi ways as far as you can see, runways that are paved with the longest being over 7000 feet long, glider operations on weekends from this facility with no intrusions from powered aircraft! Sound too good to be true?

Well, if you were to fly with the Winnipeg Gliding Club throughout the month of April you would have had all of this and more. No, we didn't win the Lotto and go crazy with expansion at Starbuck, but rather we temporarily moved our operation 40 kilometres northwest to Portage La Prairie and flew from the ex-military base.

Last summer during the return of Lake Agassiz, (commonly referred to as the floods of '93), our club was shut down entirely for six weeks. It was only during a drier spell that we were able to find a bit of dry ground and towed both trainers over to Portage to fly from their airstrip. The facility is excellent and we were well received by the Management of the airport. Normally the base is used by a private contractor for initial flight training for the military but they only fly during the weekdays with the base shut down on weekends. A glider pilot's dream come true.

"The Book of the Best"

This new 65 page reference book by Ursula Wiese (in looseleaf form for easy updating and storage in a 3-ring binder) presents the evolution of soaring achievement in Canada. With extensive flight and aircraft data, it is a comprehensive history of records and diamonds flown, trophy recipients for each year's best flights, national contest champions, and awards to pilots who gave freely of their time for the betterment of the sport. The criteria for each trophy or award, and sample application forms are also included.

Every club has received a copy (which should be kept accessible to its members). A personal copy can be yours for \$10 (sales tax included for Ontario residents). Order now through "Soaring Stuff" or the *free flight* address.

During the winter months negotiations continued for a planned early start in the spring. We were relieved when the thaw came in early March and the promise of flying by April 1. We were not disappointed (although we were somewhat cold) and we flew our first flights on April 1 as planned. Now some may have said that only fools would fly on April 1 and perhaps they were right as low ceilings and strong winds only allowed a handful of flights to take place. By late afternoon we shut down and a fierce blizzard engulfed southern Manitoba, dropping several centimetres of wind-whipped snow on us. Bummer. But we had the beginning of one of the earliest flying starts ever in gliding club history.

For all of April we flew every weekend and some pilots reported some strong thermal activity with an increase in daily temperatures. We managed to fly exactly one-eighth of the flights done in '93 and even signed up a new student from the Portage area. It can only be a sign of better things to come this season.

Also this winter we ran a very successful ground school with over a dozen new students signing up. Some were visitors from the previous summer who had taken intro rides with us while others were power pilots seeking to add a new dimension to their piloting abilities. We also expect a return of previous students from last year that will complete their flight training and receive their licences.

Our club became involved with a couple of local Junior High Schools that have theory of flight as part of their science classes. In one case a club member conducted a series of workshops with the students and had them building paper gliders and discussing various practical means of controlling their flight paths. In another scene a more advanced class had designed their own gliders by computer aided design and then went to the school's workshops and built them. Following a series of flight tests and modifications, these future aerodynamic engineers put their gliders to the test and received marks as to how well they performed in turns and straight and level flight. We had a Standard Jantar on display in the school's gym and awarded the first place team with glider certificates for an intro ride. Many of the teachers came to have a look and expressed an interest in our sport.

Projects on the boards for 1994 also include our annual attempt at a provincial contest. Last year we were not successful in having any contest flying from the field due to the

poor weather but we are optimistic that this will change this season.

There is a strong desire to attend the summer Cowley camp, although it interferes with an airshow during the August long weekend at an airport north of Winnipeg. Planning to participate is Manfred Radius and his aerobatic routine, a real eye-opener. The club is set to have a glider or two on display and an information booth. Attendance is expected to reach over 50,000 for the two days. What a great way to get our sport in view.

Mike Maskell

ONTARIO SOARING ASSOCIATION STARTS A SOARING LADDER

What is the Ontario Soaring Association? What does it do? What does it cost me? These are questions that I encounter frequently. I will try to explain briefly who we are and what we are attempting to do. OSA membership consists of the 16 member clubs in the province. You as a soaring pilot are a member through your club. Membership fees are \$5 for each club. In return the OSA acted mainly as a delivery vehicle for Ministry of Culture, Tourism and Recreation funding. For example, in 1993-94 the Association received some \$12,000 to support member clubs in instructor training, provincial championships, cross-country clinics, etc. I hope that you can see that we give back far more than we take.

We are one of the few soaring groups in this country that gets money from the government. We are very much in danger of losing this status. We are being encouraged to change OSA's role from that of a passive distributor of government money to one that better supports the clubs, and our sport. The primary means of doing this is through "participation development". That is, encouraging soaring pilots to be more active within their clubs and the sport. The Provincial Ladder, detailed below, is a model of what we are trying to achieve. We invite your participation in this process.

A ladder. Just what you need for spring house painting? Well, not exactly. The Ontario Provincial Soaring Ladder gives you a way to record your best flights and compare your performance with other pilots. Offered by the Ontario Soaring Association, its objectives are to encourage cross-country soaring and friendly competition, particularly among club pilots and those who don't regularly take part

in contests. It is organized with a minimum of red tape and cost for the participants.

The main requirement is for you to climb aboard the sky-chariot and do some flying. It doesn't matter whether you declare a flight, where you go, whether you merely stay up for half an hour. Any flight will earn points. And most claims will be accepted on the honour system. Mind you, cross-country flights to declared turnpoints will earn you more than hanging around over the field. And if you are in hot pursuit of a trophy you will be required to produce flight evidence such as photographs, barograph traces and release forms before you lay hands on the silverware. A claim for 500 km in a 1-26 on a windy day is unlikely to convince your Ladder Official Observer.

Entrants pay a fee of \$15, and will receive a list of Ontario turnpoints, a copy of the rules and claim forms. A booklet of photos of turnpoints is also available for an additional \$10. Once you've registered, go fly, and submit your claims to the Ladder OO at your club.

OOs have volunteered to supervise ladder claims at most clubs. (If you wish to volunteer at your club, contact Stephen at the address below.) The Ladder OO will verify your claims and will return them to the administrator. Ladder ranking will be published in *free flight*. A winner and a runner-up will be declared at the end of the season.

Though OSA has borrowed ideas from a similar scheme run by the British Gliding Association, this is the first time that such a ladder has been tried in Ontario. It will evolve and mature with experience. Try it and enjoy!

Ladder Committee:

Stephen Foster (TSC) Ian Grant (GSC)
10 Blyth Street Fred Hunkeler (SOSA)
Richmond Hill, ON L4E 2X7

Ken Withrow, president OSA

ALBERTA SOARING COUNCIL ABOUT TO CONTROL COWLEY

As Albertans nervously watched Premier Ralph Klein to see where the next budget cuts were coming from, we knew it wasn't going to be too long before the sports community in Alberta would be affected as well. The first shoe dropped in January when we found that our annual grant funds were to be cut by 20% effective the new fiscal year.

There were also rumblings that the provincially maintained airports were going to be turned over to the private sector as a means of moving these expenses out of the government budget, and at the Alberta Soaring Council AGM in February, members discussed the need to perhaps set up an endowment in case we needed to bear the cost of owning and operating Cowley airfield.

In late March, ASC was informed by a letter from Alberta Transportation and Utilities that as of 1 April 1994 they would no longer pay the costs of maintaining Cowley airfield. However, the good news was that they were prepared to turn the land over to ASC if we agreed

continued on next page

to assume the operating costs. (The government was well aware of the historic soaring nature of the airfield and its local tourism impact.)

On April 13 our Cowley Development chairman Bruce Hea and I met with officials to discuss details. We were advised that Alberta Transportation were willing to enter into a 10 year agreement to make us the airfield operator for a dollar a year so long as we agreed to:

- maintain it as a public airport,
- assume all operating costs, and
- continue to allow access to other groups such as the local aeromodellers.

At the present time the department is reviewing the comments and suggestions we made on the proposed agreement. Additionally we are working with Sedgwick to ensure that we can meet the insurance and indemnity requirements.

We have had discussions with a local farmer to cut the runways and work the land as well as haul water and garbage and provide firewood for the summer camp. With these arrangements the annual cost to ASC will be minimized. It will be necessary for visiting pilots to provide a little sweat equity to help spruce up and maintain the buildings. We are fortunate that Alberta Transportation is leaving the picnic kitchen shelter and campground toilets on site for us.

We hope that we will be able to finalize the agreement soon and that Cowley will continue to be the soaring pilots' wave Mecca in Canada for years to come.

Marty Slater
president ASC

CHMELA SELECTED AS VOLUNTEER OF THE YEAR

Walter Chmela, the president of York Soaring Association in Arthur, Ontario, was selected "Volunteer of the Year" by a panel from the Ontario Ministry of Culture, Tourism and Recreation. All major sporting associations were invited to make nominations. The Ontario Soaring Association nominated Mr. Chmela, the first time our sport had proposed anyone.

The nominations were reviewed by a panel of citizens familiar with sports, including noted sports broadcaster Brian Williams. The award includes a certificate, an impressive 2-1/2 inch medallion and a lapel pin.

Walter has been active in gliding for 54 years. He has started two clubs, hosted the Nationals, been named SAC Instructor of the Year, organized air cadet camps, performed glider aerobatics at airshows, and introduced young people and women to soaring. A Diamond badge recipient, he holds several Canadian open and multiplace records, including absolute altitude (12,449 metres), and gain of height (8321 metres), both dating from 1974.

Late in 1993, he was awarded the prestigious Paul Tissandier diploma by the FAI in Paris, although he did not learn of the honour for several months.

Neil Macdougall
York Soaring

hangar flying

Soaring meets the information highway

Kateri Belanger
(MCSK_BEOPAVO.CONCORDIA.CA)
AVV Champlain

In recent years, there has been much talk about the new information highway. Well, guess what? — it's here and it has reached the world of soaring. Where else, besides the Internet, can you have discussions about spin training or competition rules and read about incidents and great flights in the company of gliding enthusiasts from around the world. The Internet is also a great place to access gliding weather information, communicate with flying buddies (without the long distance phone charge) and meet other flying nuts like you.

It has recently come to my attention that many glider pilots who have Internet access do not know of these wonderful sources of information and discussion about the soaring world.

Usenet newsgroups on aviation There are numerous newsgroups related to aviation, even one about soaring. Here's a list of a few of the aviation related groups you can find:

- rec.aviation.announce
- rec.aviation.answers
- rec.aviation.homebuilt
- rec.aviation.ifr
- rec.aviation.military
- rec.aviation.misc
- rec.aviation.owning
- rec.aviation.piloting
- rec.aviation.products
- rec.aviation.questions
- rec.aviation.simulators
- rec.aviation.stories
- rec.aviation.students
- and last but definitely not least,
- rec.aviation.soaring

I can't really tell everyone how to access these newsgroups since most newservers are slightly different from one another (ask your Newsmaster or SysOp if you need any help, or do what I do and type "help".)

"rec.aviation.soaring" is a forum for discussion about soaring of any kind, including parasailing and hang-gliding. Discussions centre around training, aircraft (technical), stories and gliding in general. Pilots and would-be pilots

post articles to ask questions, answer and give their opinions on many subjects.

You can even plan your next vacation on this newsgroup. People regularly post to ask about gliding clubs in this or that region of the world. The advantage of getting this information over the net is that you not only get the dry stats about these clubs, but you also get the opinions of pilots who have actually flown there.

One thing I can say about "rec.aviation.soaring" is that it kept me dreaming through all those long, cold winter days (although I was sometimes green with envy when pilots from the southern hemisphere of our globe would boast about the beautiful conditions they were having). So, whether you go to "rec.aviation-soaring" for technical information or for an opinion, you are sure to meet friendly glider pilots from around the world from the total beginner, who wants to know where he can learn to soar, to the "ace" glider pilot.

SSA Server The Soaring Society of America owns a wonderful mailserver which is loaded with soaring related articles, safety reports, and computer programs to help you calculate contest scores. All of these things are available via electronic mail although it may take up to two or three days before they answer (it's worth the wait). You can even submit articles to their server. They can be reached by e-mail at "MAILSERVASSA.ORG" by sending a "help" message. I must applaud the SSA for all the hard work that goes into this mailserver.

Weather info Using e-mail, you can access all sorts of weather information. This includes things like the thermal index and upper air conditions. This service is not really useful for the novice glider pilot, but could be invaluable for pilots planning long tasks and contests. Did I mention that it is free? Have fun decoding the information you get.

So, whether you are looking for technical information, good soaring stories or people's opinions about soaring related subjects, the Internet will be able to supply you with hours of fun. See you on the net!

SAC Student Instruction Manual

Soar and Learn to Fly Gliders

the new, improved, rewritten, updated manual
is now available from national office \$19.95

How to sell your event to the media

Pierre Tourangeau
SAC Publicity Chairman

Pierre is a news broadcaster with Radio Canada (CBC) specializing in events of an economic nature.

1 The last thing you want to do is to invite journalists to a soaring competition. What you should do is to inform them that an important event will take place on a certain date. You have to sell an event. Considering that the competition as such is somewhat boring to cover for an outsider, you have to prepare activities that will be entertaining for them and/or the public while the sailplanes are away, like gliding movies, aerobatic demos, familiarization flights, BBQ, etc.

2 Once you have the event well laid out, you need to create a teaser for the press as well as for the general public. Four to five weeks prior to the event, you need to inform the media of the date and the content of the event. Don't be shy to use the proper qualifiers in order to create an interest (a rare event, an exceptional demonstration, an exciting competition, a spectacular sight, etc.)

The simplest method to inform the media is through a wire service like Canadian News Wire or a local one like Telbec in Québec.

Very important: Always include the name and telephone number of your public relations person. Journalists will not seek you. If your organization is hard to reach, your communiqué will hit the waste paper basket in no time flat.

3 Draw the list of specific members of the press who might have a specific interest in your event. That may be because you know them personally or their beat is sports, local events or simply because they may be interested in gliders. Seek out the freelancers who are always on the lookout for events with a special flavour. Find out the angle that will interest them and is specific to the type of news they specialize in. Remember that the press is now your customer and you need to answer their needs.

4 Now it is three weeks prior to the event. Send another communiqué to rekindle their interest in the competition. It is now time to contact those members of the press that you have already identified. Meet them. You have to show them that they may miss something by not covering the event. Communicate the "angles" that they might be interested in.

5 Two days prior to the event, contact the targeted journalists once again.

6 On the "day", it is important that everything is as per plan. Make sure that the press

members are well taken in charge by a knowledgeable person. Make accessible to them the things they need like a phone, a fax, a press room. How you treat them is critical.

7 Even when the event is over, contact your target group, even if they did not cover the event. These people can be of assistance at a later date. Press relations is a long time project.

Pierre est un chroniqueur à Radio Canada et spécialiste des questions à caractère économique.

1 D'abord se mettre dans la tête qu'on n'invite pas les journalistes à une compétition de planeurs. On les informe qu'un événement important se déroule à telle date. Il faut donc vendre la compétition, en faire un événement. Pour ce faire, il serait peut-être bon, d'abord, de s'arranger pour que durant les compétitions, qui en elles mêmes sont plutôt ennuyantes à couvrir, d'autres activités soient organisées de nature à attirer le public et à divertir et intéresser les journalistes (visionnements de documentaires sur le vol à voile, démonstrations de planeur acrobatiques, mini-pag-eant aérien, vols d'initiation pour le public et les journalistes, méchoui sur place, etc...)

2 Une fois que l'événement est créé, il faut "teaser" les journalistes (comme le public d'ailleurs). Pour ce faire, assez longtemps avant l'événement (quatre à cinq semaines environ), il faut prévenir les médias (aussi bien locaux que nationaux) de sa tenue et de contenu. Ne pas avoir peur dans le texte de vendre l'événement en le qualifiant (spectacle exceptionnel, événement rare, compétition excitante, spectaculaire, etc.)

Pour prévenir les médias, le plus simple est d'avoir recours à des agences de diffusion de communiqués de presse: Telbec au Québec, et Canadian News Wire au Canada anglais.

NB. Toujours donner le nom d'une personne-ressource avec son numéro de téléphone. Les journalistes ne doivent pas avoir à courir après les organisateurs. S'ils ont de la difficulté à obtenir de l'information sur l'événement, il vont foutre le communiqué aux poubelles et passer à autre chose.

3 Dresser une liste des journalistes qui pourraient être plus susceptibles d'être intéressés à couvrir l'événement, soit parce que ce sont des journalistes sportifs, soit parce qu'on les connaît, soit parce qu'on sait qu'ils pourraient être intéressés par le planeur. Ne pas hésiter à contacter même les chroniqueurs, qui en général, sont toujours à la recherche des sujets un peu spéciaux. Pour chacun, trouver une raison qui les incite à couvrir, ne pas hésiter même à trouver un angle de couverture qui convienne au type de journalisme qu'il fait. Autrement dit, il faut être capable de répondre à un besoin du

journaliste pour qu'il trouve une raison valable de nous couvrir.

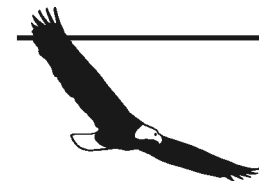
4 Trois semaines avant l'événement, envoyer un autre communiqué rappelant l'événement. En même temps, prendre contact par téléphone avec les journalistes identifiés précédemment. Essayer de les rencontrer. Objectif: leur faire comprendre que s'ils ne couvrent pas l'événement, ils risquent de rater quelque chose d'important. Leur suggérer des angles de couvertures.

5 Dernier rappel par communiqué: deux jours avant l'événement. En même temps recontacter les journalistes cibles.

6 Le jour même, il est évidemment important de bien organiser l'événement, ce qui veut dire que rien ne doit être laissé au hasard. Surtout, on doit bien encadrer les journalistes et s'assurer de mettre à leur disposition tout ce dont ils ont besoin: salles de presse, téléphones, fax, personne-ressource et guide, etc. L'accueil est très important.

7 Après l'événement, garder le contact avec les journalistes contactés, même s'ils n'ont pas couvert l'événement. Ces gens pourront nous être utiles éventuellement. Les relations avec les médias sont un travail à long terme.

PS J'espère que ces quelques indications pourront vous être utiles.



Coming Events

1-3 Jul **Saskatchewan Provincials**, Strawberry Lakes gliderport, SK. BBQ on 1st, and 4-10 Jul is a XC week – all pilots welcome. Contact: Bryan Florence (306) 545-3366.

4-8 Jul **"Un-Nationals" Novice Soaring Contest**, with realistic handicapping for lower performance sailplanes. Pendleton, ON hosted by GGC. Contacts: Rick Officer (613) 824-1174, Glenn Lockhard (613) 692-3622.

5-14 Jul **Canadian National Soaring Competition**, SOSA. Contest manager Ed Hollestelle, (519) 461-1464 (H), (519) 455-3316 (W).

16-23 Jul **Eastern Instructor School**, Hawkesbury, ON, contact Joe Bowes (514) 973-4888.

23-24, 30-31 Jul **French Instructor School**, St Raymond, course conductor Serge Morin, contact national office for info.

23 Jul - 1 Aug **Cowley Summer Camp**, Canada's largest soaring fest. Contact Tony Burton for info (403) 625-4563.

25-29 Jul **MSC Soaring Contest** for sport & club sailplanes. Contact Gilles Séguin (514) 377-5737.

14-20 Aug **Western Instructor School**, Chipman, AB. Contact Terry Southwood (403) 255-4667, and national office for entry information.

27-28 Aug **Tillsonburg Air Show**, airport north of Tillsonburg, ON on Hwy 19. Over 100 exhibitors, aircraft, balloons, classic cars, trucks. Shuttle bus service, RV parking. Contact (519) 842-9805.

6-10 Oct **Cowley Wave Camp**, contact Tony Burton for details, (403) 625-4563.

OPINIONS

continued from page 5

what significant differences arise and then judge which of these point differences properly reflect the contest conditions and what skills we are trying to measure. OK? Let the Sporting committee know your opinions.

Charles Yeates, George Dunbar

HAVE YOU FLOWN A 'VOLKSWAGEN' LATELY?

When looking at the statistics, it becomes obvious that things in our soaring community have stagnated in the last decade. Memberships have been shrinking, equipment has been aging and the number of flying aircraft has been decreasing. When was the last time you have witnessed the arrival of a new glider on your field? Of course there are a few new modern ships in the hands of the upper class, but the ordinary people, just looking for fun still do not have an affordable glider with which to realize their dream. The great cost of the new gliders produced in Germany, which could be considered in the same class as a BMW or Mercedes, puts them out of reach for people looking for something like a Volkswagen — an affordable glider, easy to operate and maintain.

The World Class glider was expected to be an affordable ship under \$20,000 ready to fly. However, the price tag was inflated to almost \$28,000 including taxes with an additional US\$5,000 for enclosed trailer, making this package, once again, affordable just for the rich and famous. Although, the PW-5 is considered to be a fun machine, capable of satisfying a wide range of needs of the soaring community, it is just too expensive. As a result, people are still waiting for a Volkswagen.

Fortunately, something new is rising above the horizon in a country I have recently visited. A new, private company in the Czech Republic was founded by talented engineers after they had lost their jobs in the state controlled aeronautical industry. The company, TEST, concentrates on designing and manufacturing of recreational aircrafts. Their first product, the TST-1-Alpin (see photo) is a glider/motorglider, with a detachable power unit. Thus the aircraft can be flown as a

motorglider in the ultralight category or as a pure glider. When I first saw the machine, I was excited — after the first flight I was amazed. This is the machine I have been waiting for for a long time. I enjoyed my experience so much that I placed my order right away, in time for a summer delivery.

I have also signed an agreement allowing me to be the sole North America distributor of this sensational little aircraft. The cost is estimated below Cdn\$20,000, including engine, standard instruments and shipping to a North American port. The company is also offering a complete kit for homebuilders. A two seater is also under development.

For more information about the aircraft I have a complete pack available for \$10. If interested please write to: Peter Doktor, 36 Buchanan Rd, St. Catharines, ON L2M 4R6.

A NOTE ON INCORRECT RIGGING

Although I am a low hours glider pilot, I may have some thoughts to add to the safety article in the last issue of *free flight*.

First, it's possible to bolt the horizontal stabilizer of the Ka6CR on crookedly, as one can with the K-7 and K-13. And yes, it is important to choose your positive control check helper with care. Before one of my first flights with my own glider, a man who identified himself to me as a Ka6 pilot from the Eastern US 'helped' me with a positive control check after I had installed the elevator crookedly. The good news is that a glance from near ground level on a standard walk-around is all that's needed to detect this condition on these gliders. (When looked at head-on, the stabilizer must 'centre' visually within the shallow dihedral angle of the wings.)

Secondly, it may not be wise to use the technique of securing the Blanik control stick with either a shock cord or the seat belt. An article appearing in SOARING several years ago reported that a Blanik's torque tubes can be bent when the stick is tied back and the glider bumps over a rough surface. The safe way to secure the elevators — now standard procedure at Cu Nim — is with control locks.

David McAsey, Cu Nim

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Introducing the "Alpin", a design somewhat similar to the Duster in its external features.

Introduction Some changes have been made to the Bronze badge to more aptly recognize the continuous development of a pilot's skills after licencing. The purpose is to bridge the gap between the first level "C" badge (1 hour flight) and the more difficult Silver "C" badge which requires a somewhat daunting 5 hour duration flight plus a 50 km cross-country flight and a 1000m gain of altitude task. Some advanced dual flights are needed which, it is hoped, will materially increase your enjoyment of the sport. The badge, therefore, will be a ready means of showing that you have acquired these additional skills, which are not normally taught for the glider pilot licence. When you have this badge you will be well on your way to having the basic skills for cross-country flying, though you may not of course aspire to this type of flying. However the skills are a necessary part of becoming a competent glider pilot.

This badge is the required entry level for the Basic or Beginner's cross-country clinics run across the country by some provincial associations and by the Canadian Advanced Soaring Association (particular course entry requirements may contain extra items not specified for this badge). The badge is available from the SAC office and is awarded by the club to pilots completing the requirements. A checklist is available from your CFI to keep with your logbook. The required exercises are listed below.

Three consecutive spot landings An area is to be marked out on the runway approximately 50 metres wide by 150 metres long. The glider is to cross the threshold at a minimum height of 1 metre, and come to rest before the 150 metre mark. If the pilot does not achieve the above on one of the three landings, three consecutive landings are to be re-attempted. The instructor will certify successful completion of these landings on the checklist below. Before attempting this task, discuss the requirements with an instructor, and ask that the landings be witnessed so that the checklist may be signed accordingly.

Off-field landing exercises These exercises are to be flown dual, and will normally require a minimum of two flights. Field selections should be practised at different times of year, and choices that are made from the air close to the club should be checked on the ground after the flight.

Map reading and final glide exercises Map reading can be practised at any time. The requirement for the badge includes an ability to mark the map to show typical final glide heights needed to return to the club. The exercise to be flown dual will include a final glide from a distance of about 5 miles, and must show you can judge your glide to arrive at a minimum of 1000 feet above ground, to allow sufficient height for the circuit.

Rigging/derigging/trailer The requirement can be completed on a non-flying day, and would include some trailer handling. Arrange with an instructor to be taught how to derig and rig the glider that you might fly cross-country first. The requirement for independent rigging checks is important, and the method of recording this must be included. Trailer reversing exercises should be practised, with other pilots providing a lookout. The club instructors will suggest how to set up a suitable practise area. Get fully conversant too with the hazards of trailering with a glider, particularly if the club owns an open trailer.

Introduction L'insigne de bronze s'insère entre l'insigne de premier niveau, l'insigne C, qui demande un vol d'une heure et l'insigne C d'argent qui demande un vol de 5 heures, un vol de 50 km et un gain d'altitude de 1000 metre, plus difficile à atteindre. L'insigne de bronze distinguera le pilote qui a dépassé le niveau de base du permis de pilote.

Les conditions pour obtenir cet insigne seront atteintes par le pilote au cours de plusieurs vols dont certains seront avec un instructeur. Cet insigne démontrera que vous avez acquis la compétence nécessaire pour faire des vols-voyages, même si vous ne désirez pas faire ce type de vols pour le moment. Toutefois ces habiletés sont nécessaires à tout pilote compétent. Cet insigne est requis pour participer aux différents séminaires offerts par l'Association Canadienne de Vol à Voile et le groupe Vélivoles de Compétition.

L'insigne est décerné aux pilotes qui ont complété les conditions requises sur la liste qui suit.

Trois atterrissages de précision

Ces atterrissages se font sur une aire de 50 metre de large par 150 metre de long. Le planeur doit traverser sur l'aire à un mètre d'altitude et s'arrêter avant la borne de 150 mètre. Les trois vols doivent être réussis consécutivement. Un témoin visuel doit certifier ces vols.

Exercices d'atterrissage en campagne

Cet exercice doit se faire avec un instructeur au cours de deux vols minimums. Le choix de champs distincts doit se faire à deux moments différents. Ces champs sont choisis en vol près du club. Ils sont visités en voiture après le vol.

Cartographie et vol de descente finale

La lecture des cartes peut se pratiquer à tous moments. Le pilote doit pouvoir tracer sur la carte la distance nécessaire pour retourner au terrain du club en descente finale. L'exercice en vol doit se faire avec un instructeur. A environ 8 kilomètre du terrain en vol le pilote doit démontrer qu'il peut juger l'altitude requise pour arriver à hauteur de circuit, 1000 pieds d'altitude, au terrain de son club.

Assemblage/désassemblage/remorquage

Ces activités peuvent se faire un jour où il n'y a pas de vol et doivent inclure des activités de remorquage avec auto. Un instructeur démontrera les procédures de désassemblage et d'assemblage du planeur que vous piloterez éventuellement lors d'un vol-voyage. Ces procédures sont importantes, le pilote doit avoir un registre de ces activités. Les exercices de remorquage doivent se faire en présence d'autres pilotes. Un instructeur du club déterminera une faire de pratique. Il est important d'acquérir de l'expérience de remorquage d'un planeur sur route, surtout avec une remorque ouverte.

C H E C K L I S T	Requirement	date done	signed	Requirement	date done	signed
	1	Glider Pilot Licence			8	Map reading exercises during dual flight
2	Pilot in command time of 10 hrs			9	Final glide exercise during dual flight	
3	Soaring flight of 2 hrs – 1st flt			10	Rigging/derigging/trailer instruction and practise	
4	Soaring flight of 2 hrs – 2nd flt			11	Club requirements for XC flying	
5	3 consecutive spot landings in marked areas on club field			12	Basics of advanced instrumentation (speed to fly ring, TE compensation, final glide calculator)	
6	Off-field landings, dual field selection exercises					
7	Off-field landings, dual circuit planning exercises					

FAI badges

Walter Weir 24 Holliday Drive
Whitby, ON L1P 1E6 (905) 668-9976 H

The following Badges and Badge legs were recorded in the Canadian Soaring Register during the period 17 March to 1 May 1994.

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The following record flights are being claimed:

750 km O & R speed. Open, citizens, 145 km/h, 12 May 94, Walter Weir, ASW-20B, C-GGWW. Flown from Keystone, PA with the turnpoint at Covington, VA. If confirmed, this flight will fill in the last remaining unclaimed record category in the Open list.

300 km speed to goal. Open (not FAI), citizens, 145.9 km/h, 12 May 94, Walter Weir, ASW-20B, C-GGWW. Flown from Keystone, PA to the goal at Covington, VA. The only prior record in this category was the territorial flight by Wolf Mix in 1966 at 108.6 km/h which still stands.

The following record flight has been approved:

400 km triangle speed. Open (not FAI), citizens, 119.7 km/h, 25 Jan 94, Charles Yeates, Lak-12, VH-XQR. Flown from Waikerie, Australia with turnpoints at Pinaroo silo and Cullulleraine road junction. This record surpasses the one set by Walter Weir in 1990 of 111.8 km/h.

training and safety

5-FLIGHT CURRENCY RULE DEAD

It's a pleasure to announce that we have been given an exemption from the requirement to carry out five takeoffs and landings when a pilot is non-current. Since this occurs to most of us at the start of every season, the requirement previously meant that all non-current instructors and pilots had to do five flights before carrying passengers (which included being able to instruct). Although we had been expecting to obtain an exemption for instructors only, the exemption is worded to cover all glider pilots.

The requirement now is that a glider pilot must carry out a minimum of two dual flights with a current instructor, to be certified as being able to carry passengers. Certification will be by instructor sign-off in the logbook when the instructor is satisfied with the demonstrated performance: "Certified to carry passengers" plus signature and date. It is expected the exemption will be published in the AIP at the next amendment publication date. All clubs should by now have been notified through their CFI.

Ian Oldaker, chairman FT&S Committee

BUT ARE YOU SURE IT'S RIGGED?

Every year you hear stories of tragic accidents or near-accidents that occur because of rigging errors. Why? Why do intelligent pilots make such errors? Is it pilot error or bad design? Is it just ignorance? How many times have rigging errors gone undetected and a "normal" flight made on a misrigged glider? This article has been provoked by one such tragic incident — a real accident that happened to a real pilot on a real glider. Read this and think about it.

Question: How do you *know* that your glider is correctly rigged? Consider this scenario. You and your partners have just bought a new glider. You know how to rig it because you have seen it rigged before and besides, you have rigged many different types of gliders in your time. You rig the glider and DI it. Stop — consider the following: how do you know you have rigged it correctly? Well, it looks OK ... all the pins are accounted for and you have checked for wear and tear, etc. Fine, now ask yourself this question: how do you know you have *not* rigged the glider *incorrectly*?

Think about the difference. Suppose you were standing next to your glider and I came up to you and said, "I'll give you \$1000 for every deliberate mistake you make in rigging your glider that fools me." How many ways of misrigging your glider could you think of? How much money do you think you could get out of me? Have you ever *tried* misrigging your glider? Probably not. I go back to my earlier question: so how do you *know* you have not rigged your glider incorrectly?

The point is we all assume that because all the pins fit in and the wings stay on we have rigged the glider correctly. This may not be the case. It may be possible that you can fit all the pins, attach all the safety clips and still not have a safe glider. If you have never deliberately tried to misrig your glider, how do you know what it would look like or how easy it would be to misrig in the first place? *You don't.*

So the next time you find yourself rigging your glider, think about all the ways you could deliberately misrig it. Why not give it a try. Make as many errors as you can. Think of the \$1000 you will get for each one that fools me. (It might be a good idea to stick a large piece of paper to the panel to indicate that the glider is misrigged!) If you have partners get them to do the DI and see if you fool them. Until you know you know how easy it is to misrig your glider and what it would then look like, you can never be sure that it *is* rigged correctly, can you?

Deliberately misrigging the glider and getting someone else to DI it might of course be beneath you — you might be too experienced for such games. Let's hope you are right. But why should I care, it's not my life that depends on it.

Chris Davidson
from SAILPLANE & GLIDING



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(complete list on back page of *free flight*)

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2	FAI 'B' badge, silver plate pin	5.00		
3	SAC Bronze badge, pin (available from your club) (12 for \$55)	6.00		
4	FAI 'C' badge, cloth, 3" dia.	4.50		
5	FAI Silver badge, cloth, 3" dia.	4.50		
6	FAI Gold badge, cloth, 3" dia.	4.50		
7	FAI Flight Declaration form /sheet (available from your club)	0.15		

Manuels et accessoires de vol

✓	Carnet de vol pour pilote de planeur (boîte de 66 pour \$435)
✓	Carnet de vol d'entraînement de l'élève pilote (français) (24 pour \$60)
	Manuel d'instructions de vol à voile rev. jan 80 (français – \$5 encore)
	Instructions en vol – notes (pour instructeurs) (français) (12 pour \$30)
✓	ACVV guide des procédures pour FAI certificats et insignes (édition 6 • anglais)
✓	CISTRSC (vert) / SWAFT (rouge) liste de vérification (12 pour \$12)

Articles FAI • certificats / insignes

(voir aussi revue *vol libre*)

✓	Insigne FAI 'A', plaqué argent
✓	Insigne FAI 'B', plaqué argent
✓	Insigne ACVV bronze (disponible au club) (12 pour \$55)
✓	Insigne FAI 'C', écusson de tissu
✓	Insigne FAI argent, écusson de tissu
✓	Insigne FAI or, écusson de tissu
✓	Formulaire de déclaration de vol de la FAI /feuille (disponible au club)

Total _____

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Total _____

Please enclose payment with order. Prices include postage and GST. *Ontario residents*, add 8% sales tax for items having a ✓ in the "Tax" column. Do not forget to indicate the size you want for shirts.

Votre paiement devrait accompagner la commande. La livraison et TPS sont inclus dans les prix. *Les résidents de l'Ontario* sont priés d'ajouter la taxe de 8% pour les articles marquées d'un ✓. Ne pas oublier de mentionner la taille des chemises.

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Trading Post

SINGLE SEAT

1-26C, C-GNYB, 1260h, basic instruments, no trailer. \$6000 obo. MSC club ship. Call O. Maranta (613) 678-5197.

1-23 Std, CF-ZBR, 1951 ser#16. Full overhaul, new paint, regular and sport canopies, encl trailer. Call Don Sutherland at (604) 325-5016, leave message.

Tern, 1971 wood homebuilt, 30:1 performance, comes with encl metal trailer, chute, and radio. \$5000 or best offer. Chris Gadsby (403) 283-2411.

M-100, C-FRIV, Ka6E perf, very short field perf, aerobatic, excellent cond, cockpit recently refurbished, elec vario, radio, O2, chute, encl metal trailer. Asking \$9500. Dave Harper (905) 896-3758 (H), or Garfield Ingram (416) 239-9740 (B) 239-7465 (H).

Zugvogel IIIB, 17m, almost 40:1, good condition, complete with radio, instruments, barograph, trailer. Helmut Wieland (613) 541-6606 (B), 548-7564 (H).

Monerai, C-FEUQ, vg cond, basic instruments, audio vario, netto, panel mount TR-720 radio, encl steel trailer. \$7200. Struan Vaughan (403) 362-5837.

HP11A, C-FUKB, 518 h, standard instruments, CB radio, open trailer available. Highest performance for your \$, has done gold and diamond flights. For quick sale as is, the first person with a reasonable offer will be flying this spring — after spring with fresh inspection, \$10,900. Bob Patterson (905) 457-5238, 9 to 9.

Monerai, C-GRHG, less than 30 hours, standard instruments, radio, tinted canopy, new encl alum trailer. Easy to fly, good cross-country beginner ship. \$4500. Mark Brown, Winnipeg (204) 895-2929.

HP-16, C-GAUZ, 395h, excellent workmanship and cond, standard instruments. Encl alum trailer avail. Also avail: Security chute, Narco radio, Winter baro, O2 tank and reg. Must sell — \$10,900 obo. Call Eric Ketonen Sr. (705) 799-6623 (H), 748-7953 (B).

KW-45, CF-SNZ, 500h, homebuilt glass fuselage with Open Cirrus wings, tinted canopy, radio, O2, Ilec vario system, encl alum trailer. \$17,000. Fred Wollrad (403) 479-2886 or Harold (403) 474-0139.

Glasflügel Mosquito, 15m like-new self launching sailplane, 883 h, Rotax 501 engine, Terra radio, Cambridge, disc brakes, Pfeiffer trailer. Harry Miltner (509) 925-6214.

free flight non-commercial advertising

- Personal sailplane and sailplane equipment ads are free for SAC members, \$10 per insertion for non-members.
- Ad will run twice. If ad is to continue, notify editor for each additional two issues. Notify editor when item is sold.
- Normal maximum length is 6 lines. Ads are subject to editing if space is limited.
- Send ad to editor, NOT to National Office.

TWO PLACE

2-22E, C-FACC, 1965, good condition. \$4500. Covered trailer (needs work), \$500 with glider only. Call Steve Patton, (604) 536-2819.

2-33A, C-FARD, 1974, 1850h, no damage, very good condition inside and out, always hangared, new fabric and paint, yellow with orange trim, open trailer, asking \$14,000. Roland Trudel (514) 835-3775

Gemini, all metal with fibreglass fuselage, outstanding 37:1 sailplane holds national records — 500 & 100 km triangle speed, etc. Basic instruments, 2 chutes, trailer. Jean Lapierre (514) 655-7766.

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TOWPLANE

Murphy REBEL kit, only \$17,850. This rugged, roomy, metal 3 seat STOL can be your next towplane. Use a Lycoming O-320 or Subaru 160 hp engine and you can get better than factory performance with the cost advantage of doing your own maintenance. It is also a great personal sportplane. Thrifty operation (3 gal/hr, 97 mph, 1000 ft/min on 80 hp! For info or demonstration flight call Bob Patterson (905) 457-5238, 9am to 9pm, 22 Baronwood Court, Brampton, ON L6V 3H6.

MISCELLANEOUS

Wanted — LK-10 trailer and information on LK-10s in Canada. Call Herrie ten Cate (416) 604-3579 (H).

Wanted — Radair 10s radios in working cond or for parts. Pierre Bertrand (514) 421-6373 (collect ok).

Parachutes, three Cu Nim club military chutes, \$250 each. Dave Fowlow (403) 289-9477 (H).

Wanted — Parachute, thinback style. Also will trade electronic Ball vario for a mechanical vario. Mike Cook (604) 427-5471.

Wanted — Standard Class sailplane to fly at the 1994 Nationals. Experienced BC pilot willing to beg, borrow, or even rent a suitable ship as the distance prohibits bringing my own. Required from 2-15 July. Call Nick Pfeiffer (604) 850-9345.

MAGAZINES

SOARING — the journal of the Soaring Society of America. International subscriptions \$US35 second class. Box E, Hobbs, NM 88241 (505) 392-1177.

SOARING PILOT — bimonthly soaring news, views, and safety features from Knauff & Grove Publishers. New large format. \$US20, add \$8 for first class/foreign postage. Box 1145, Frederick, MD 21702-0145 USA.

NEW ZEALAND GLIDING KIWI — the official publication for the 1995 World Gliding Championships at Omarama and the bi-monthly journal of the N.Z. Gliding Association. Editor, John Roake. \$US25/year. N.Z. Gliding Kiwi, Private Bag, Tauranga, N.Z.

SAILPLANE & GLIDING — the only authoritative British magazine devoted entirely to gliding. 52 pp, bi-monthly. Cdn. agent Terry Beasley, Box 169, L'Orignal, ON K0B 1K0 or to BGA, Kimberley House, Vaughan Way, Leicester, LE1 4SG, England. £15.50 per annum (US\$30) or US\$40 air.

AUSTRALIAN GLIDING — the journal of the Gliding Federation of Australia. Published monthly. \$A40.50 surface mail, \$A55 airmail per annum. Payable on an Australian bank, international money order, Visa, Mastercard. (No US\$ personal checks.) Box 1650, GPO, Adelaide, South Australia 5001.

SUPPLIERS

REPAIRS & MAINT.

Sunaero Aviation. Glider repairs in fibreglass, wood, & metal. Jerry Vesely, Box 1928, Claresholm, AB T0L 0T0 (403) 625-3155 (B), 625-2281 (Fax).

XU Aviation Ltd. Repairs in wood, metal and composites. (519) 452-1240 (B), 268-8973 (H).

INSTRUMENTS & OTHER STUFF

Barograph calibration, most makes and models. Walter Chmela (416) 221-3888 (B) 223-6487 (H).

Variometers, winglets, mylar seals — all products designed and built this side of the Atlantic! Peter Masak, High Performance Engineering, (713) 431-1795 (B), 431-2228 (Fax).

Variometer / Calculator. Versatile pressure transducer and microprocessor based vario and final glide calculator. Canadian designed and produced. Skytronics, 45 Carmichael Court, Kanata ON K2K 1K1. (613) 820-3751 or 592-0657.

Firmal Electronics. Cambridge variometers, L Nav and S Nav now both available with Global Positioning System (GPS) option. You need never be lost again! Write for list or phone John Firth, 542 Coronation Avenue, Ottawa K1G 0M4 (613) 731-6997.

MZ Supplies. CONFOR foam, Becker radios, most German soaring instruments. 1450 Goth Ave, Gloucester, ON K1T 1E4 tel/fax (613) 523-2581.

SAILPLANE DEALERS

Schempp-Hirth. Nimbus, Janus, Ventus, Discus. Al Schreiter, 3298 Lonefeather Cres, Mississauga, ON L4Y 3G5 (416) 625-0400 (H), 597-1999 (B).

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

Schweizer parts. Walter Chmela, (416) 221-3888 (B), 223-6487 (H), #203, 4750 Yonge Street, Willowdale ON M2N 5M6.

Solaire Canada. Ed Hollestelle (519) 455-3316 tel & fax. SZD-55-1, Krosno, PW-5, trailers, GPS, and other sailplane stuff.

PROVINCIAL ASSOCIATIONS

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Halifax, NS B3K 4A9
(902) 455-4045

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5140 St-Patrick
Montréal, PQ H4E 4N5
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Ste-Catherine, PQ G0A 3M0
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Bramalea, ON L6S 6A3

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1085 St. Jovite Ridge
Orleans, ON K1C 1Y6

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Kingston, ON K7L 4W2

RIDEAU VALLEY SOARING SCHOOL
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(613) 489-2691

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(416) 773-4147

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Calgary, AB T3L 1K5
(403) 239-5179

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(403) 459-8535

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Grande Prairie, AB T8W 2A6
(403) 539-6991

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Site 310, C6, RR3
Port Alberni, BC V9Y 7L7
(604) 723-9385

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Surrey, BC V4N 3G3
(604) 589-4552

BULKLEY VALLEY SOARING
Ted Schmidt Box 474
Smithers, BC V0J 2N0
(604) 847-3585

VANCOUVER SOARING ASSN
Membership Secretary
Box 3251
Vancouver, BC V6B 3X9
(604) 521-5501

SAC SUPPLIES FOR CERTIFICATES AND BADGES

1	FAI 'A' badge, silver plate pin	\$ 5.00
2	FAI 'B' badge, silver plate pin	\$ 5.00
3	SAC BRONZE badge pin (<i>available from your club</i>)	\$ 6.00
4	FAI 'C' badge, cloth, 3" dia.	\$ 4.50
5	FAI SILVER badge, cloth 3" dia.	\$ 4.50
6	FAI GOLD badge, cloth 3" dia.	\$ 4.50
	<i>Items 7-12 ordered through FAI awards chairman</i>	
7	FAI 'C' badge, silver plate pin	\$ 5.00
8	FAI SILVER badge, pin	\$39.00
9	FAI GOLD badge, gold plate pin	\$35.00
	<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 (record of badge achievements)	\$10.00
	Processing fee for each FAI application form submitted	\$10.00
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	SAC Flight Declaration form (<i>also stocked by club</i>) per sheet	\$ 0.15
18	SAC guide "Badge and Records Procedures", ed. 6	\$ 5.00
19	FAI Sporting Code, Section 3, Gliders, 1992	\$ 7.00
	available from and payable to Aeroclub of Canada	

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.

ARTICLES ACVV POUR CERTIFICATS ET INSIGNES

Insigne FAI 'A', plaqué argent	\$ 5.00
Insigne FAI 'B', plaqué argent	\$ 5.00
Insigne ACVV BRONZE (<i>disponible au club</i>)	\$ 6.00
Insigne FAI 'C', écusson de tissu	\$ 4.50
Insigne FAI ARGENT, écusson de tissu	\$ 4.50
Insigne FAI OR, écusson de tissu	\$ 4.50
<i>Les articles 7-12 sont disponibles au président des prix de la FAI</i>	
Insigne FAI 'C', plaqué argent	\$ 5.00
Insigne FAI ARGENT	\$39.00
Insigne FAI OR, plaqué or	\$35.00
<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 diamants	
Certificat FAI de vol à voile (recueil des insignes)	\$10.00
Frais de services pour chaque formulaire de demande soumis	
Formulaire de demande pour insignes (<i>disponible au club</i>)	
Formulaire de demande pour observateur officiel (<i>disponible au club</i>)	
Formulaire de demande pour trophées de vol de l'ACCV	
Formulaire de demande pour records FAI	
Formulaire de déclaration de vol de l'ACCV	
ACVV guide des procédures pour FAI certificats et insignes (éd.6)	\$ 7.00
FAI Code Sportif, Planeurs, 1992	
disponible et payable à l'Aéroclub du Canada	

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.

SAC National Office, 306 - 1355 Bank Street, Ottawa, ON K1H 8K7 tel (613) 739-1063 • fax (613) 739-1826
Aeroclub of/du Canada, 306 - 1355 Bank Street, Ottawa, ON K1H 8K7 tel (613) 739-1368 • fax (613) 739-1826