

free flight

1/83 Jan-Feb



vol libre

PRESIDENT'S MESSAGE

Are you going to be upset and angry when you have to pay a thousand dollars to insure your sailplane this year? Or are you going to complain when pilot premiums increase again?

These things are a reflection of one aspect of our sport – our accident record. It would be nicer to call it our “safety record”, but we don’t have one any more. When we collect a quarter of a million dollars in premiums, and the insurance company has to give it all back to us to repair our broken aircraft, we have a truly disastrous year. We can be thankful only for the fact that so far we have not had any successful liability claims against us with settlements approaching one million dollars. As you know our present coverage is only five hundred thousand dollars. Some individuals and a few clubs feel that this coverage is too low.

Last year in March a notice was sent out to all clubs offering one million dollars of liability coverage at an additional coat of twenty-five dollars per member, the plan to become effective **only** if more than 500 pilots registered for the option. Seventy-five individuals (mostly from one club) demonstrated their interest by sending in the extra premium; the plan did not, therefore, come into effect.

I strongly recommend everyone to consider carefully the level of liability coverage they feel is appropriate; and if you feel that five hundred thousand dollars is inadequate, then let your club executive know. Perhaps one million dollars of coverage should not be an individual option, but should be part of the basic plan.

Why did so many pilots crash their aircraft last year? Are glider pilots getting unluckier? Is it something to do with the economy — did they need the money in a hurry? No, of course not. The indications are that the majority of the accidents last year (as in all years) are attributable directly or indirectly to pilot error. Four (out of eighteen) accidents were first flights on type and can therefore be put down directly to lack of the requisite technical skill on the part of the pilot (but how good was the pre-flight briefing, how suitable were the conditions, how well prepared mentally was the pilot?) Poor decisions are made for all kinds of reasons – tiredness, laziness, fear, over-confidence, peer pressure, lack of planning, ignorance, and in many cases as a result of other pressures (real or imagined) not to “land out”. Have you ever heard someone say to a pilot flying a club ship, “make sure you don’t land out today, the fields are as muddy as swamps”, or “better make it back to the field; we’ll all be at the corn roast”, or whatever? I have heard that some clubs have a policy of “punishing” a pilot for landing out in the club ship. Now that’s a good way to set a club up for an accident!

For those of you that like last year’s statistics: nearly half of the accidents wrote off the glider; nearly half were to fibreglass ships; only one was to a towplane; none occurred as a result of contest flights. Other observations over the years suggest that some clubs consistently have a worse record than others. Some individuals appear to be more likely to crash a glider than others.

The Instructors’ committee, the Safety committee, and the Insurance committee are actively studying last year’s events and will be making recommendations to the membership. We all know you can’t legislate safety, but we can change attitudes. The general attitude toward flying held by the members of a club tend to be shaped by the more senior and more highly respected club members — the CFI, the competition pilots, the successful cross-country pilots. For the safety and security of us all and our sport it is up to these people to demonstrate the highest possible degree of safety consciousness, airmanship or whatever you wish to call it. If you see someone about to go flying in a ship in conditions for which you feel they don’t really have the experience, don’t just watch and hope — say something.

Remember, the life you save may be your friend’s.

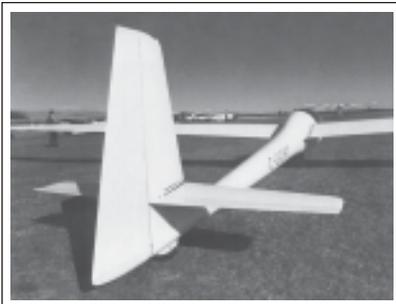
Russ Flint

free flight

1/83 Jan-Feb

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Le Journal de l'Association Canadienne de Vol à Voile

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COVER

Kevin Bennett's Open Cirrus, GORT, about to begin a day of cross-country at Cu Nim. Photo by Hans König.

A letter from Ursula

Something I wanted to let you know...

This is the first issue under a new production scheme, **free flight** is now prepared in Claresholm to the "camera ready" stage. This challenge (and freedom from the limitations imposed by having the magazine layout done by a remote printer) has revived my energies to continue with the task as editor. The new arrangement should remarkably cut down the production time, reduce costs, and allow more flexibility. The National Office remains responsible for commercial advertising, and the printing and mailing. I expect that by taking advantage of the time savings possible by being closely involved with the layout, **free flight** should be arriving at your door about three weeks sooner than last year (unless, of course, you haven't bothered to give your new or correct address to the National Office; a follow up may help at times).

I express my thanks to those who appreciate "the good work". It's my pride and pleasure, but I do rely on many fine authors from across the country who so actively support **free flight** with their contributions, and support the editor's will to continue the job. I would like to especially mention Boris Karpoff, Ian Oldaker and Dr. David Marsden for their continued efforts to keep us up-to-date on achievements, and dramatic changes of licencing and sporting in Canada, and Eric Newsome for his observations of our peculiarities at the gliderport. I would like to congratulate Mirth Rosser for her courage in sharing her horror story ("Bail-Out") with all of us in this issue, so we may learn and be spared such experience; but I'm most grateful to Tony for his tireless assistance in the artwork and layout of **free flight**.

Yet, I feel sorry for the many pilots who deprive themselves of the pleasure of being active contributors. There are 47 clubs in this country – how many tell us about their activities? Take to the quill yourself, and inflate your chest as friends praise your initiative and skills as author. Remember also, we are in constant need of unusual photographs for our front cover (they must be sharp!). The subjects are endless, and so are your experiences. I don't mind handwritten papers, or fair writing skills; in extreme cases I accept well prepared tapes or a telephone message (at your cost). Anybody with a good working cassette recorder out there to donate to the editor? How else can I assist you to get started with some writing? If you have a question, or difficulties, feel free to write or call. I can sell sailplanes even before the ad is read in **free flight** (and still without charging commission).

Club newsletters are a great source of information, and quite often spur ideas for soliciting other stories. Recently, **free flight** has recycled (reprinted) a lot of ideas, many from foreign countries. Simply leaf through this issue and see for yourself. But I believe that the magazine deserves more originality, reflecting our own ways...

SAC announcements, notices... are published for you to take action as necessary (there have been a few changes recently!) How about the 1983 calendars? They are terrific! Your club was given plenty to sell, and the National Office still stocks hundreds of them. Now you and your friends are all going to buy a few calendars to put on the walls this year, why isn't one of them the SAC calendar? Remember, the printing costs come out of your membership fees anyway, if there is a loss.

The SAC Board of Directors or I don't set priorities on **free flight** content, either towards grassroots information or competitions. I try for a balance, but it's mostly a matter of your contributions. If you would like to read a special subject, simply ask for it (or better yet, write it).

The best remedy to our shortcomings is communication, and the good will to listen, learn and act. Use **free flight**. We benefit from lending a hand or an ear to somebody, if you give just a little, you can get a lot.

Hope to see you in March at the AGM.

Claresholm, 10 December 1982



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 Royal Canadian Flying Clubs Association (RCFCA), the Canadian national aero club which represents Canada in the Fédération Aéronautique Internationale (FAI, the world sport aviation governing body composed of national aero clubs). The RCFCA has delegated to SAC the supervision of FAI-related soaring activities such as record attempts, competition sanctions, issuance of FAI badges, and the selection of a Canadian team for the biennial World soaring championships.

free flight is the Association's official journal.

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, opinion, reports, club activities, and photos of soaring interest. Prints (B & W) are preferred, colour prints and slides are acceptable. No negatives will be used.

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. Directors' names and addresses are given elsewhere in the magazine.

All contributions to the magazine will be acknowledged on receipt. We will endeavour to say when it will be used. All material is subject to editing to the space requirements and the quality standards of the magazine.

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

For change of address and subscriptions to non-SAC members (\$15.00 per year) please contact the National Office.

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**Deadlines for contributions
5th day of every 2nd month**

L'ASSOCIATION CANADIENNE DE VOL À VOILE

est une organisation à but non lucratif formée de personnes enthousiastes cherchant à protéger et à promouvoir le vol à voile sous toutes ses formes sur une base nationale et internationale.

L'ASSOCIATION est membre de "L'Association Royale Canadienne des Aéro Clubs" (RCFCA – Aéro Club National Canadien), 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, le RCFCA 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.

vol libre est le journal officiel de l'ASSOCIATION.

Les articles publiés dans vol libre sont des contributions dues à la gracieuseté d'individus ou de groupes enthousiastes du vol à voile.

Chacun est invité à participer à la réalisation de la revue, soit par reportages, échanges d'opinions, activités dans le club, etc. Un "courrier des lecteurs" sera publié selon l'espace disponible. Les épreuves de photos en noir et blanc sont préférables à celles en couleur ou diapositives. Les négatifs ne peuvent être utilisés.

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 correspondance faisant l'objet d'un sujet personnel devra être adressée au directeur régional dont le nom apparaît dans cette revue.

Pour chaque article reçu, nous retournerons un accusé de réception et donnerons la date probable de sa publication. Les textes et les photos seront soumis à la rédaction et, dépendant de leur intérêt, seront insérés 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 (\$15.00 par an) veuillez contacter le bureau national.

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OPINIONS

HOW MUCH ARE YOU WORTH?

...(after the tow-pilot insurance problems of a year ago) we (the VSA executive) thought, "We will be smarter this year. We shall have a strong representation at SAC, we shall try to modify the tow-pilot clause, we shall opt for the 1 million dollar liability coverage, so we can fly with a piece of mind."

Now we learned, again at the end of the season, that we did not have the coverage we thought we did. Why? Because we were told the 1 million dollar coverage in the SAC scheme was optional. Besides our club, only a few other people asked for it, hence there were not enough applicants to validate this option. But the administrators did not have the decency to inform us of this condition until the season ended! If you think we were angry last year, you should see us now! How irresponsible can you majority be.

Let me paint a scene for you:

I am a student, in the front seat, almost ready to solo, just going through some final polishing. The lift on the slope is weak and narrow, a few other gliders also want to stay up. I am flying slower and slower, suddenly the bottom falls out; I am in an incip-ient spin; spin recovery action is taken; too late. I hit the trees and a branch hits my head. Both the instructor and I survive: but I just broke my neck, and I am paralyzed from the neck down. The instructor is uninjured.

Personal injury awards run from \$800,000 to as high as \$3 million these days. Yes, in Canada. I, or my wife, now contact the insurance company and they are willing to pay out the \$500,000. This is far from enough to sustain even a semi-dignified living with such disability, so we start legal action. The judge awards me, let's say \$1.2 million (a very modest award these days). I will first pick up the \$500,000 because it is readily available from the insurance. Then I will have to recover somehow the remaining \$0.7 million.

My lawyer starts looking at assets now: the instructor was an agent of the club, hence the club is liable for damages: two tow-planes at \$20,000 each, four sailplanes at \$15,000. A court order could liquidate the club's assets, and I get another \$100,000 – \$600,000 to go. Suppose the instructor is a senior pilot with Air Canada, having a nice home and good salary... Don't forget, I need that money, and it has been awarded to me! I have the right to collect it from all involved!... I have calculated that, to sustain a severely disabled person (with modest accommodation), would cost about \$8,000 to \$10,000 a month. The capital for this amount of interest income must come from somewhere.

My friends, don't put me down yet. You all realize that flying is still a little more risky than walking. If you know the risk and don't compensate for it, you are careless and negligent. As our accident record shows, we do have problems. We are just very fortunate that when bodies have been bent, most injuries have been minor, and a few fatal. But there are other types of injuries too, and these are the ones that could result in the demise of whole clubs and total personal destruction of people we cherish most. All that for a crummy 25 bucks extra per year with which you could have demonstrated prudence, care, consideration, and demonstrated that you acknowledge the risk involved in flying, properly compensate for it and accept the consequences...

Some of you undoubtedly think I am trying to sell insurance. Far from it. I am, unfortunately, very familiar with the circumstances when there is no insurance, or just an inadequate coverage... (as my own stepson has been permanently disabled as a result of a car accident in which the driver had only minimum no-fault insurance).

I say all this in the hope that, when the next year's insurance renewal comes up, you will THINK. Think about how much your flying is worth, the existence of your flying club is worth, the services of your instructor are worth, where the compensation is coming from in case of an accident, how much of it you would be able to collect; in other words, HOW MUCH ARE YOU WORTH?

George Eckschmiedt
Chief Flying Instructor

Oct 1982

THE STORY OF COWLEY

The Cowley summer and wave camps begin to attract more pilots every year. It's because of its unique location to Centre Peak, the wave producing mountain in Alberta; it's because of the protective valley where is always lift, or ridge soaring.

In 1982, we celebrated the Tenth Cowley Summer Camp after the official granting of use of the former emergency airstrip by the Alberta government. A lot of work by volunteer pilots made this happen. And all these efforts, mostly from correspondence with the official bodies, have been kept alive in the book "The Story of Cowley", compiled by Ursula Burton, and sponsored by the Alberta Soaring Council. If you are interested in this booklet, please write to Dave Luck, #201, 10815 116 Street, Edmonton, Alberta T5H 3M4, or to Ursula, There's no charge.

Mike Apps, President ASC

continued on next page

DON'T TRUST THEM HAWKS!

I noted the story of Barry Jeffery free flight Nov-Dec 82, an account of a pilot joining a buzzard in a circle, only to be left in weak sink. This confirms an early experience of mine when I was trying to keep aloft in a 1-26. Noting a couple of hawks circling in their own gaggle of two, and mindful of what the text books say about indications of rising air, I rushed over to join them.

You guessed it – as soon as I was established in their circle, they turned on the muscle power and flapped away, leaving me in sink. And I'll swear that as the last of the pair flew past me, it had a broad grin on its face. Never again will I trust the birds – they are fundamentally dishonest and are only interested in keeping intruders out of their airspace, by fair means or fowl.

Yours in sink,
D. W. Clark

Really now, everybody knows hawks can't grin... their lips are too stiff! Ursula.

DoC RESPONSE TO SAC QUERIES ON RADIO LICENCE FEE INCREASE

Dear Mr. Flint:

On behalf of the Honourable Francis Fox, I would like to reply to your letter of August 6 expressing the concerns of the members of the Soaring Association of Canada about the increase in licence fees for aircraft radio stations.

The Department's activities in the management of the radio frequency spectrum which are directly supportive of the Aeronautical Service fall into the following three broad categories:

- Providing protection from harmful interferences from other countries through notification of frequency assignments to the International Frequency Registration Board.
- Participating in international negotiations to obtain and protect recognized frequency bands for the Canadian aeronautical services.
- Managing the frequency spectrum at the national level including providing protection from domestic interferences, defining and enforcing technical standards for equipment, assessing the utilization level of the frequency bands through inspection and monitoring, processing applications, issuing and renewing licences.

Licence fees are not a charge for use of radio frequency spectrum but rather are used to cover a part of the expenses the Department incurs. Radio licence fees are based on these costs; however, only a portion of them is recovered through licence fees. The difference is funded by federal tax revenues.

For some time, government departments have been working toward a reduction of their demands on the federal treasury by instituting programs of cost recovery. As the Department incurs significant costs in managing the frequency spectrum, it has sought to recover some of those costs through radio licence fees. I might mention that the last fee increase for the Aeronautical Service was in 1975.

We are, of course, always open to the views of the users of the spectrum concerning our approach to cost recovery and to the method by which we determine licence fees. In fact, the Department is currently carrying out a general review of these matters...

Given the recently announced government policy of price restraint in the federal public sector, I should emphasize that any revisions made to radio licence fees during the program will be in line with this policy.

I trust that this information will be of assistance to you.

Yours sincerely,

Jan Innes
Special Assistant
Office of the Minister of Communications

SOSA IS NO DESERT

Bob von Hellens came from Phoenix, Arizona to attend the 1982 Canadian Nationals. For those who are not familiar with the Arizona environment, I would like to explain it.

Arizona is shadowless, very hot and very dry, communities are isolated real desert country. There are blue thermals, or cloud base is extremely high – 12 to 18,000 feet or so. It is wise to stay away from outlandings, desert ground is most inhospitable; hardwood shrubs and cacti are hazardous to your ships. Only air-conditioned mobile homes make existence at gliderports liveable, and that usually is a very dusty field. Most American gliderports are run by commercial enterprises where you get good service (but you also pay commercial prices) and the pilots remain more isolated from their counterparts, thus the usual typical club atmosphere is widely lacking.

With this in mind, please read Bob's main impressions of the Canadian Nationals. ... Ursula.

An airport, having lush, well-mowed green grass runways 200 feet wide outside of a bucolic village known as Rockton, 100 km west of Toronto, is owned by the Southern Ontario Soaring Association, SOSA, the host club for the 1982 Canadian Nationals. A well equipped clubhouse, large hangars and aspen fringed plots of ground assigned to various members for their house trailers are part of the property. The acre-

age not otherwise allotted had mature trees, with adequate clearance for all runway approaches, and hay grew in the many glens. When was the last time you smelled newly cut hay at a glider meet? July 1-10, 1982 the temperature irrespective of cloud cover, was warm enough during the day for shorts yet suggested long pants at night. I can't imagine a more pleasant setting for pilot and crew.

On my arrival after a hectic drive of 2433 miles I was greeted as a celebrity for being the only foreigner there and directed to my tie-down area. It was a grassy space about 100 feet square; a painted nameplate set in a moveable concrete pad identified it and became a marvellous souvenir.

...Rockton is bounded to the south by Lake Erie and sources of US and Canadian industrial pollution, to the southeast of Lake Ontario, to the westnorthwest by Lake Huron and to the north by Georgian Bay. Any change in wind direction or strength will create an immediate change in inversion layer, convective strength and cloud cover. But, unless the inversion is down to 1000 feet or less, maintaining altitude or, at least a reduced sink rate, is often possible – this took several days to learn...

I have never before flown so low, so slowly for so long, but I will go back any time I can. The SOSA members were exceedingly friendly and enjoyable company and Monika (my crew) cheered when I needed cheering. The pilots from all parts of Canada remembered that we do this because it's fun. That aura prevailed throughout the pilots' meetings, staging, take off, finishes, outlandings, banquet and beer drinking and made it the most enjoyable contest I've ever attended.

BORIS AMAZES LONDON

"...the Awards committee is doing an outstanding job of processing badge claims, if the following example is any criterion:

"One of our members made a 63 km cross-country flight on July 24 which qualified him for his Silver badge. He mailed his claims from London to the Awards committee chairman in Toronto on July 27, and much to his amazement received his Silver badge by mail in London on August 6! Considering that there was a holiday on August 2, and that the Post Office was involved both ways, the service is nothing short of phenomenal. Does this constitute some sort of a record?"

Fred Sinclair
London Soaring Society

Boris says, "I just got back on Sunday night from a three-week business trip in Africa (Republic of Central Africa and Cameroon), rested on Monday and yesterday worked till 2:30 am to process all the claims!! My wife's comment was, "*/\$%&," but the claims are done..."

continued on page 19

'SHORTY'

In this historical flashback, 'Chem' Le Cheminant describes the early days of Shorty Boudreault's gliding career, and how he earned Canada's first Silver C badge in spite of his rebellious stomach. Shorty is still fairly active at Gatineau, although he no longer flies solo. This story comes from the SAC 1948-49 Yearbook.

Gliding and soaring will eventually, like other sports, bring into the limelight the names of men and women whose outstanding achievements set them apart from others.

The name of Ovila "Shorty" Boudreault is perhaps the first of these, and he will no doubt go down in gliding history as the first Canadian to win his Silver "C" in Canada. As if that were not enough, he also holds the No. 1 Canadian FAI Certificate, and thus finds himself in a unique position in gliding circles the world over.

Shorty, well named even by his immediate family, is a towering five-foot-one pillar of strength at the Gatineau Gliding Club of Ottawa, his home town. A French-Canadian with a twinkle in his eye and a ready smile on his lips, he is made of stern stuff and his laurels have not come the easy way. One of the founder-members of the Gatineau Club, Shorty had his first chilly introduction to the sport in a bitter snowstorm in late 1942, in an open Dagling. A year later he made his 'A' and 'B' certificates and, on July 4, 1944, amazed his instructor by soaring in the nacelled version of the same craft on the club's Gatineau hill site for fully 15 minutes to qualify for his "C".

Among the preliminary steps to this goal must be included an involuntary spin from under 300 feet, which was corrected with great gusto and an enormous sigh of relief from the onlooking club members, and another time when the release was not pulled and a vicious swipe of the axe was necessary to free him from the tow-rope. Besides he often talked of quite unintelligible things called "thermals".

Another year saw Shorty at Elmira, NY, taking dual training and acting as crewman to a two-seater pilot in the contest. Here Shorty found his Nemesis; the continuous circling in his beloved "thermals" made him airsick in no uncertain manner. About 30 minutes was the most he could take without disastrous results. This indeed was frustration in its most violent form.

Shorty returned to Ottawa a wiser but nonetheless undaunted devotee. Slowly his periods in the air increased, and by 1947 his longest flight was over two hours,

and as long as he had the controls, breakfast stayed where it belonged.

This year, with the Olympia to hand, that Silver "C" seemed to be within easy reach. But long before soaring weather set in, that beautiful machine had become severely damaged and repairs a long way out of sight. Not to be outdone, Shorty prepared to do it the hard way; Silver "Cs" have been earned many times before in a Grunau Baby.

On May 2, with a climb to 7600 feet above Carp he achieved his height "leg" with lots to spare. On July 2 after one previous attempt at leaving the home field, Shorty set the GB down at Pendleton, 41 miles away, after a flight of two hours, 20 minutes, and gained his distance "leg". Only the duration remained.

The first attempt ended after two hours 50 minutes. Air sickness gripped him viciously again and he just had to give it up.

On August 1, the wind being favourable Shorty once more started to plough the air, but this time in the familiar country along the Gatineau slopes where three years before he had gained his "C" in the Dagling. The dark green of the trees was restful in the bright sunshine and, the thermal lift he was riding well above the crest of the hills, so different from the treetop scraping necessary with the Dagling.

For three hours all was well and then his stomach rebelled. But this time he would not give up. Nauseated by a second gripping attack, and a third... would the hands on the watch never go round? Ashen but determined, his hat as his baling bucket, he steadily forced the Grunau's nose into the breeze.

Finally, after what must have seemed agonizing years, his watch registered the required five hours. But, not to be cheated after such hours of suffering he held to his course in order to defeat any margin of error. Almost another half hour he stayed aloft.

Thus was won Canada's first Silver "C", a flight of five hours, 28 minutes, clinching the required third and final leg, □



Shorty is helped into his parachute before a flight in his old Phoebus at Sugarbush, Vermont during the Thanksgiving Wave Camp. This photo was taken in 1968, but except for the snow-white hair now, he looks just as good!

Sub-Gravity Sensations & Gliding Accidents

Part 1

Derek Piggott

The author is the internationally known Chief Flying Instructor at the Lasham Gliding Centre, England. He draws attention to the possible cause of many accidents where gliders have dived steeply into the ground for no explicable reason.

Introduction

Over the past twenty years or so there have been a surprising number of fatal accidents in which the glider has gone into an ever-steepening dive until it hits the ground. Unless the pilot survives, it is impossible to be sure of the cause of these accidents, and it is difficult to believe that any fully trained pilot would hold the stick hard forward, when to pull back would save his life.

My first experience of such an accident was in 1952. After releasing the winch cable, a Cadet Mk2 glider went into a vertical dive hitting the ground past the vertical. There was absolutely no sign of technical failure, and at the inquest the medical authorities suggested either a panic state or a first epileptic fit as possible causes. Any form of fainting or loss of consciousness would apparently result in a relaxation rather than a push forward on the stick, and the glider being stable would have started to recover.

Another accident for which no definite cause could be found was a two-seater making a normal approach in rather turbulent conditions. In this case the glider making a normal approach was seen to dive in to a railway embankment just short of the airfield. Probably a reduction in loading was caused by the nose being lowered quickly or by flying through turbulence and apparently the student pushed hard forward on the stick. In this case the student was reported to be very sensitive to low 'g' and there was evidence that the instructor had shouted out just before the crash and that probably the student had frozen on the controls.

A personal experience not long afterwards convinced me of the cause of this accident. I was fully aware that my student was very sensitive to low 'g' and was working on the problem. At about 50 feet on a normal approach we hit some rough air so that momentarily we experienced almost zero 'g' and nearly left our seats. The student's immediate and instinctive reaction was to push forward on the stick. I was just

quick enough to close the air brakes and to pull backwards, and we hit the ground hard but on an even keel. Had I been a second later we would have crashed and been badly injured. In this case the student had reacted to what he thought was a stall.

Several dive-in accidents following cable breaks on winch launches drew attention to the dangers of teaching 'stick forward' as the patten for the initial reaction to a cable break or stall recovery. In an emergency the student is likely to push hard forward pitching the glider violently. Unless he is watching the change of attitude by looking ahead, this will result in a very intense sensation. Close to the ground there may not be time to recover from this incapacitating sensation and the glider may fly into the ground. Students should be taught to lower or put the nose into the normal or the approach attitude and to watch the change of attitude over the nose. This allows the visual sense to suppress most of the unpleasant sensation and prevents an exaggerated recovery action.

There are several different causes of these dive-in accidents. Some are due to the pilot thinking that his aircraft is stalled whereas others are due to panic or visual disorientation. However in every case it is probable that the unpleasant sensations involved with nose down pitching motions result in some degree of panic or disorientation which prevents the pilot from realizing exactly what is happening and from reacting normally.

Unfortunately the usual reaction to sub-gravity sensations seem to be to push forward on the stick. This accentuates the sensation and the pilot freezes in a state of panic, perhaps for only a few seconds, but long enough to cause an accident. Instructors who have seen their students in this state need very little convincing that it is the most likely cause of these unexplained accidents. However, other instructors and some accident investigators and medical authorities are still sceptical. By far the majority of experienced pilots and instructors are completely unaware of any unpleasant sensations and it is difficult to

convince them that there are other people who feel them intensely.

Sensations and the sense of balance

The mechanism by which we balance and are able to walk about safely on two feet is complex and depends on several closely integrated systems. The semicircular canals and the otoliths of the inner ear give us information in the form of sensations on any movement we make. They also stabilize our eye movements so that our vision remains clear and steadily focused despite head movements. The sense of balance is also assisted by muscle sense. For example, when standing, any tendency to lean can be detected by the extra load on one foot or on the toes or heels and almost instinctively we correct with our leg or foot muscles to stabilize ourselves.

The otoliths are a most important part of this balance mechanism and are used in addition to muscle sense to help us to sense the true vertical. Unfortunately the various accelerations experienced in flying produce a resultant force which differs in direction and magnitude from the force of gravity. This displaces the sensors in the otoliths causing misleading sensations and in some cases visual illusions.

However, the master sense is eyesight and provided that we can see clearly what is happening, both the sensations and muscle sense are largely suppressed so that we are unaware of them.

In a pitch black room the situation is very difficult. We are vividly aware of the sensations and the changes in pressures on our feet since they are all we have to maintain our balance. Immediately we can see again, the sensations are suppressed and once more we are scarcely aware of them.

Human beings are particularly sensitive to any reduction in gravity since apart from flying it is an unusual feeling only experienced for a few seconds when driving over a humped-back bridge, in a hotel lift or at a fair grounds. From conception to the grave,

our total experience of subgravity may be only for a few minutes, an infinitesimal proportion of our total life span.

Many pilots refer to the feeling as negative 'g', but at low speeds in a glider it requires violent nose down pitching motion to reach a state of weightlessness or zero 'g' and even more to develop any negative 'g'. The sensation of negative 'g' is similar to reduced 'g', except that there is an added feeling of insecurity resulting from floating off the seat against the safety harness (which is invariably too loose). The dust begins to come off the floor and loose objects begin to float around the cockpit as in a spaceship. A really tight harness helps to provide an artificial pressure on the pilot's bottom which gives an added feeling of security. In practice, negative 'g' is seldom reached during normal glider operation and a reduction to about 1/2 g is more than enough to upset a sensitive beginner.

For most people, the feeling of reduced 'g' is associated with the frightening sensation experienced in a nightmare where we fall off a cliff. With a ride on the fairground Big Dipper, we enjoy the momentary feeling of terror. Because we can see the rails ahead, we can anticipate the movements which produce the sensation, in the same way as we do driving a car over a hump-back bridge. However, if we fail to see the warning sign in the dark and hit the bridge without anticipating it, the sensation is much worse. In fact whenever our eyes fail to see clearly what is going on, our sensations become dominating, just as they did in the dark room.

Instinctive reactions to low 'g' sensations

It seems most likely that we all associate the sensation of reduced 'g' with falling. As a baby we soon learn that it hurts to fall down and the sensation makes us react quickly to try to save ourselves. Unfortunately the instinctive action of putting out our hands to take the shock results in pushing the stick forward, thereby accentuating the pitching movement and the sensation. In the case of glider flying, the stick forces are very low and the rate of pitch is rapid, and this seems to be the reason that the problem is more common with gliders than with powered aircraft where stick forces are much higher.

It might be expected that a beginner who moves the stick forward and experiences an unpleasant sensation would respond by moving the stick back. But even on first flight, before any real learning has been done, a beginner will invariably respond by a further pushing motion. This refutes the theory that the cause is always the belief that the aircraft is stalling and that the student is making the forward movement as a recovery action.

However, in a few cases the student may have read a badly-written textbook about stalling and have programmed himself to

recover from stalls before his first flight. This could result in the student responding violently to any sensation which he interprets as being a stall.

The introduction to stalls is an important stage of training which needs special care and consideration. Any pre-flight briefing causes apprehension and it seems best to demonstrate one or two **gently**, showing what happens when the nose is held just a little too high and then to explain that the glider has been stalled.

Before going any further with the training, it is safest to explain and demonstrate the sensation of reduced 'g' showing that any nose down pitching movement produces it. During this demonstration the reaction of the student should be carefully observed. Any sign of panic or uncontrolled reaction is a warning that special care and extra training may be needed. In these cases, immediately after landing, the student should be given a careful explanation of the causes of the sensation and of what happens and why an aircraft stalls. He should also be told frankly that this is one of the sensations which every pilot has to learn to live with. His log book and progress sheet should be endorsed, "rather sensitive to low g", or a similar warning so that other instructors will be aware of the problem. In some cases it may take months of patient tuition to affect a complete cure, and until then the student may be a danger to himself and his instructors.

Most 'sensitive' beginners tend to over-react and overdo the forward movement on the stick during stall recoveries in spite of clear instructions at the time to relax the backward pressure or to ease forward. This overreaction is usually a warning sign that extra caution and instruction will be needed. The best cure seems to be plenty of practice at stalling, a little at a time, together with a complete understanding of stalling and the reasons for the unpleasant sensations.

Some accidents are caused by the pilot learning to associate the feeling of reduced 'g' with stalling. Since it is not often that the student gets this feeling, it is very easy for him to assume that the sensation is a symptom of the stall.

If it is caused by any other pitching movement he is liable to take stall recovery action and move the stick forward whenever he experiences reduced 'g'. Under normal flight conditions, this will produce a rapid nose down pitch and **intensify** the sensation.

It is not surprising that an inexperienced pilot will panic in such a circumstance. He was expecting the normal stall recovery as he moved forward on the stick and instead the worrying feeling has become worse. If this is the first time that this has ever occurred it will be very frightening.

Many years ago I witnessed an accident which changed our thinking and instructional technique for both cable break pro-

cedures on a winch or car launch and also for stall recoveries. The glider was climbing rather too steeply on a winch launch and at about 300 feet the cable broke. The pilot's reaction was immediate and the nose was lowered quickly into the glide and the cable end released. However, I was surprised and horrified to see it go into an ever-steepening dive until it appeared to be diving vertically for the ground. At the very last moment it levelled out violently, hitting the ground on the bottom of the pull-out with a noise like an explosion. As we all ran up expecting to find the pilot dead or at least critically injured, he was unstrapping himself from the main bulkhead shaken but quite unhurt. Over a cup of tea he told us what had happened.

He had realized that he was climbing too steeply just as the cable had broken and had pushed forward quickly to try to avoid stalling. Then he said, "I knew that the glider was stalled so I kept pushing forward; I knew it was no use trying to pull out of the dive because I could feel that it was still stalled. Finally I realized that I was going to hit the ground in a steep dive so I pulled back in hope that it would save me!" At the last moment his instincts had prevailed, saving his life but still destroying the glider.

Here was a case of an intelligent young pilot who had learned to associate the feeling of low 'g' with stalling. Of course as long as he held the stick forward the glider was pitching more nose down so that the low 'g' (or even negative 'g') continued. He concluded that the glider was still stalled whereas in fact it was diving at high speed. This accident brought home the need to make a point of emphasizing that this sensation, although often occurring during a stall and particularly during an over-enthusiastic recovery, has nothing whatsoever to do with being stalled.

It merely indicates a nose-down pitching motion or the sudden or rapid sinking. There is no **feeling** or **sensation** of being stalled. There are symptoms, the loss of control, the buffet, etc., but **not** sensation, and we cannot tell that the aircraft is stalled by our feelings.

One of my instructors had an exciting incident with a visiting pilot. She had been flying solo at her own club for over a year without any dual checks and the instructor was giving her a thorough checkover with a view to sending her solo on our aircraft. Because of the long gap since the last dual flight, he asked her when she had last practised any stalls. It transpired that she could not really remember. So at the top of the launch he asked her to make a stall and a recovery, then sat back confidently.

As the glider stalled she rammed the stick hard forward pitching the glider into a near vertical dive. Unfortunately the instructor was not very securely strapped in and he

BAIL OUT

On obstruction of controls & the wonder of parachutes

Mirth Rosser

These two subjects are not foreign to any of us, yet some of us may not always take them as seriously as we should. The first, of course, can kill you, and the second can save your life. Only an unprepared pilot ignores these very real possibilities. Under a particular set of circumstances only a very lucky unprepared pilot survives. This has been my experience.

On September 12 I was flying our newly-acquired HP-14 for the sixth time and had spent a few minutes in one gentle thermal, but was unhappy with my speed control which kept varying between 35 and 45 kts. Not having had much experience in high performance sailplanes with such large wing spans, I didn't like the rollercoastery feeling and flew away to do straight and level until I felt comfortable again. Shortly, at about 2400 ft. above ground, I encountered some reasonable lift and started circling right again. After a couple of 360 degrees my speed dropped and I carried out the normal 'pre-incipient spin' maneuver which I had found to be effective and safe in that sailplane – opposite rudder and slight stick forward. Immediately, I found myself in a dive as the HP recovered from what was probably an incipient spin and began to fly. But pulling fully back on the stick had no effect on the dive and WZT continued to accelerate.

My thoughts during the next several seconds consisted only of possible maneuvers that I should attempt in order to control the situation, but the situation did not seem to be one which I was familiar with. My feelings were a combination of absolute terror and disbelief. I was astonished that what I had believed was a gentle aircraft could be doing something so uncontrollable and so violent. At no time did I consider the possibility of mechanical failure or that the controls were jammed. Being a low-time pilot, I assumed it was my error.

There had been a plastic handgrip fitted over the stick, and at one desperate point when I released backward pressure on the stick (from sheer lack of any other ideas), this grip slipped off in my right hand. Weirdly, this was like a light flash: the aircraft was damaged and I could not fly out of the dive.

By now I knew I was very low, certainly under a thousand feet and flying very fast and I suddenly decided to get out, although I didn't expect to survive a jump either. From that point on everything was rapid and methodical: push two pins forward to release the canopy (which flew off with a great bang!), unlock my harness (gravity did the rest, although I was not aware of it, I was on the down side of an outside loop, almost upside-down), and pull the D-ring of my new parachute. Unexpectedly, the ring was not on the inside of the left strap, where it had been on PPM's old chute, and I actually had to spend a few seconds in free fall looking for it. In the meantime, I heard WZT crash (WHACK! as it landed upside-down in the river). In the time it took to pull the D-ring, feel the parachute open immediately and "lift" me up, orienting me vertically, I looked down for the first time since I'd left the sailplane and saw I was over water. The next moment I was several feet under water in the middle of an oxbow of the Assiniboine River, fighting up to the surface away from the chute. Estimates of my safety margin before hitting range up to one second – and that includes the ten foot bonus from ground down to the water level. My amazement at being down and alive was total.

I began to swim forward to shore away from my parachute canopy which looked indescribably beautiful floating on the water. Since I had no idea how long the lines were, I swam until I could feel and see tension on them. I was still some distance from the nearest shore and decided to try to get the harness off. At this point I noticed one of the HP's canopy locking pins embedded in the palm of my right hand with the remaining eight inches curled around and pointing up my forearm. It must have been pushed in by the force of the canopy flying off. I could not pull it out, and a few shroud lines were caught around it. This was a point of near panic, and I had to force myself to be calm, treading water slowly as I assessed my situation.

Since I was unable to undo the two leg snaps and unfasten the chest-strap buckle without the function of both hands, I decided I must pace myself by pulling the parachute canopy toward me with my left hand in order to provide some slack, then swim till I had taken it up, stop swimming and repeat the cycle. Although it might be slower, I reasoned that it would use less energy than swimming with the shrouds taut all the way. With about 4 or 5 of these cycles I reached an overhanging branch and pulled myself to the water's edge. All that remained were to pull in the canopy, get the backpack off and unravel the ropes which were tangled around my wrist and the canopy pin. Then I climbed through the brush up the river bank, emerging in a swathed grain field near some Hutterite buildings.

A few seconds later a truck carrying several men started to head for me across the field – Len Nylund with some of the Hutterites. Len had seen the HP go into the oxbow upside-down, radioed Pigeon Lake (no one heard him), then landed his 2-33 as closely as possible to the glider and spent 10 or 15 minutes diving for the pilot he believed was still in it (WZT flattening its arc once I'd left it, travelled a further 400 feet horizontally from me before impacting, and I was at treetop level when my chute opened). I don't know which of us was happier to see the other. The subsequent discomforts of having the pin removed from my hand, and spending a night in the hospital receiving intravenous antibiotics, hardly mattered.

Many of us spent the next two days agonizing over what might have gone wrong. I was most afraid of pilot error. Could I have completely mistaken what was happening and failed to take appropriate action?

During all the soul-searching I managed to think of at least four objects that had been in the cockpit not fastened down: the iron ballast on the seat underneath me; the "Ethafoam" slab I sat on, which had shifted forward an inch during flight, would have interfered with full back stick control; the bungee used to hold the flap handle in place during takeoff and tow; and a plastic handle attached to 12 inches of cord tied around the release bar, an arrangement we'd rigged because the release was inconveniently located to the right and ahead of the stick, not the best place for an emergency on takeoff.

The final consideration was that of mechanical failure – the most plausible seemed likely to be a failure in the mixer which blends the rudder and elevator functions of the V-tail.

Three days later, a professional salvage crew and some club members removed WZT from the water, and Brian Stratton from MOT did a careful analysis, eliminating mechanical failure. The plastic handle was still dangling from the release bar on the end of its cord, bearing score marks corresponding exactly to the edges of the floor opening around the stick; it was a perfect fit between the stick and the rim with the stick in a central position and the cloth boot around the stick had an oblong hole on the pilot-side through which it could easily have slipped. It almost certainly had provided the obstruction which had jammed the stick in a slightly elevator down position and maintained the dive. This simple thing almost took my life and probably has destroyed a beautiful sailplane. It could have been even worse – an unpiloted aircraft out of control near a colony of people is an awful thing to contemplate.

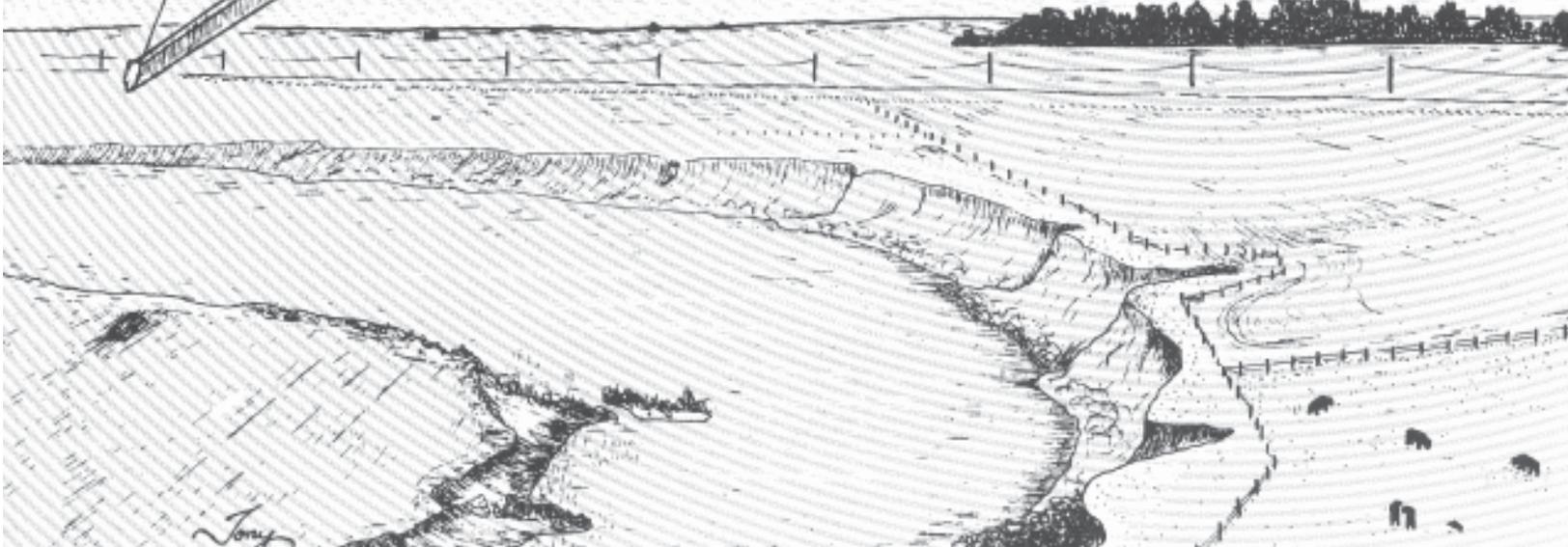
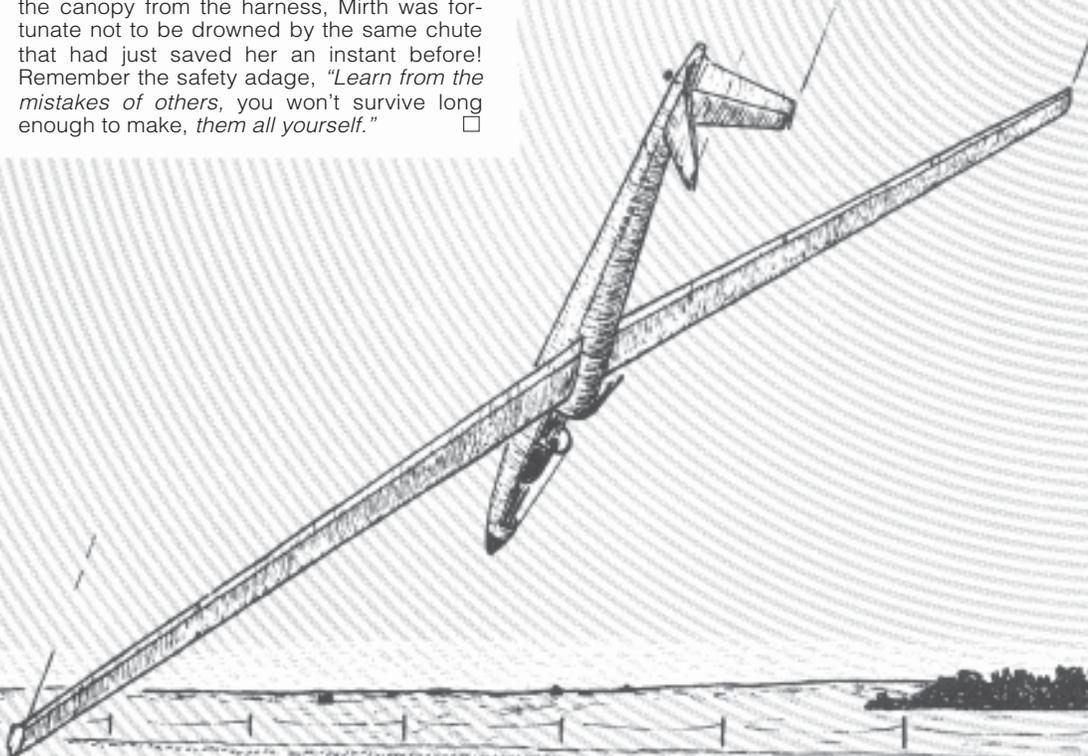
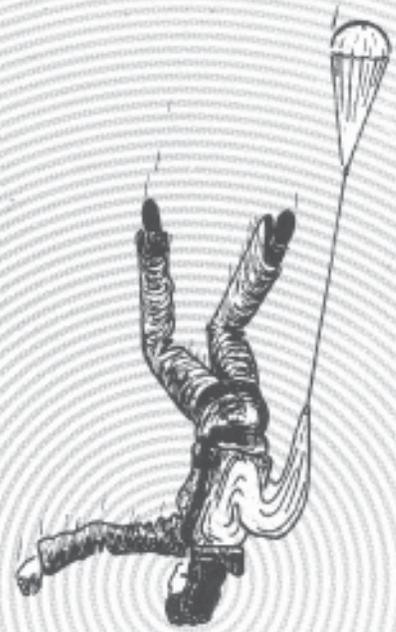
The errors had been made on the ground. Rather than designing a safe solution to the problem of the release handle's awkward location, we had made a potentially lethal modification, disregarding one of the most important principles of safe flight: never have anything loose in your cockpit. I never noticed that the boot was not intact. I've learned these lessons the hard way.

The other important lesson involves parachutes. Only a few days before the last flight I'd been complaining about the absurdity of paying a thousand dollars for a cushion to put behind me so I could reach the rudder pedals. I certainly had never expected to use it and was sure I couldn't have got out of a sailplane in flight anyway. It was difficult enough getting out on the ground.

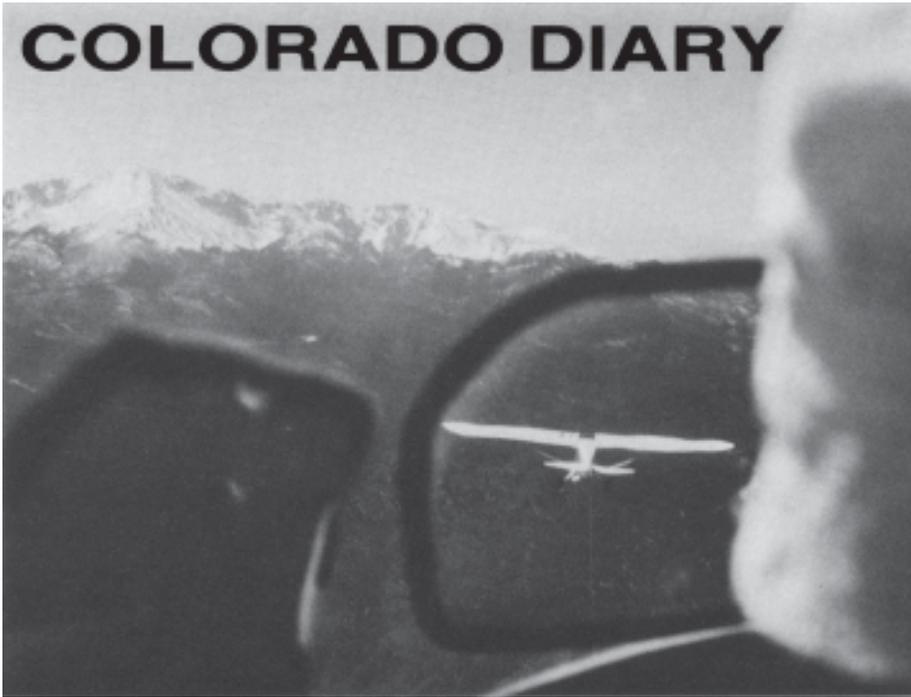
As everyone knows, in an emergency you usually can do whatever you have to. My parachute harness straps happened to be snug, not because I had considered this to be important, but because they got in the way of the ship's harness when they weren't. And I didn't know for sure where the D-ring was. Yet that chute rewarded me with the most beautiful sound I ever expected to hear – a little 'pop' as it opened. There was no shock, no jolt; it just picked me up and slowed me down. These days I hate leaving home without it. The hell with my American Express Card.

So take care, people. Imagine the worst that could happen, then realize it really is possible, and prepare to survive it.

Editor. Read again the parachute article in 2/82 page 16. For the lack of a quick release harness, or shoulder "Capewells" to separate the canopy from the harness, Mirth was fortunate not to be drowned by the same chute that had just saved her an instant before! Remember the safety adage, "*Learn from the mistakes of others, you won't survive long enough to make, them all yourself.*" □



COLORADO DIARY



Tony Burton

On tow towards Pikes Peak in "5X", one of the Black Forest 2-32s. The photo is taken from about 13,000 feet and just prior to the normal release point in the primary wave. Pikes Peak is just over 14,000 feet.

While on tow right over the field, we were towed through some bumps below circuit height. The higher we climbed the worse it got. We had heard that the rotor sometimes comes quite low and were seeing the proof of that right now.

If you've ever seen Walter's sadistic and self-righteous grin whenever the rope breaks on someone he's been towing, then you will understand how hard I was working to prevent him grinning as we jounced through the increasing turbulence! This time the rotor lacked the sharp jolting quality of the one I encountered on the orientation ride. It had other things going for it however and a couple of times the goodies rose off the floor to settle in the canopy during negative 'g'. It soon became bad enough that I had to put the ailerons to the stops just trying to remain level. With full aileron being just enough to prevent tipping one way or the other, the ship was on the limit of controllability. It was just a matter of time now. All it would take would be the proper combination of left and right gusts in succession to break the rope and set Walter to grinning. The one-two combination arrived with a blow to the left wing that managed to push us slowly over to a 90 degree right bank, despite full top aileron and rudder. A second blow sent the right wing reeling up at a similar angle with the rope having a 50 foot bow in it and the tug going the opposite way. Needless to say, that rope was coming taut fast! The match was soon to be over. We were sent to the mat when the rope came tight and snapped just ahead of the glider's towhook.

The snap of the rope was the signal that set a new game afoot. There we were, left stranded in the rotor at only 2400 feet agl with stars wheeling about our heads and every vario in the house pegged down. I could imagine Walter's grin already as he pulled away ahead of us! After a few short seconds, just as I was about to wheel about and head for home, I noticed the tug begin climbing like a scalded cat. It looked as if he'd been shot out of a cannon! John and I just stared in amazement as the Super Cub rocketed skyward about a thousand feet above us, shrinking to a speck in seconds.

Abandoning all thoughts of turning around, I pushed the stick forward and pressed on forward through the sink, hoping we wouldn't be too low to contact the wave by the time we got there. Walter hollered over the radio that his vario was showing 1500 fpm up! Just as he finished his message we entered the wave and were pressed firmly into our seats as the wings oil-canned furiously. The varios went from full down to full up. Oh, bliss! Neither one of us spoke for a couple of minutes as we were both somewhat shaken by the incident. In that two minutes we had gained 5000 feet and were now over 14,000 asl with both varies still pegged up. They didn't come off the pegs until we reached 18,000.

continued on next page

Seth Schlifer

An excerpt from Seth's account in the York "Soar Tales" of the 81-82 York Wave Camp at Black Forest, Colorado.

The pilots' meeting on the evening of December 29 revealed a good forecast for wave the next day, and more than a few pilots were observed to be drooling and wringing their hands expectantly. All the ships were assigned and both 2-32s were going to fly with double crews; John Kollar and Rudi Mueller were teamed up in "5X" and Fred Schnell and myself would fly in "77W". The double lennie altitude of 35,000 feet would be our aim. George Painter hinted to us that the Colorado state multiplace height gain record might be challenged by one or both of the 2-32 teams and that we should perhaps "Go for it!".

Well, true to the forecast, December 30 dawned exactly as the day before and all hopes ran high. Again the mad scramble began as all made ready for launch. Actually it just resembled a mad scramble because it was really well organized, honest!

John and Rudi were the first ones off and they soon were working lift coming from the

Cheyenne Mt. as they were directly over Colorado Springs. Gerry Dempsey was next up to bat and it was a bit of an eye opener to see him getting roughed up in rotor below circuit height on the way out. Good luck Gerry!

Meanwhile, Fred was nowhere to be seen. He was to be my backseat driver. When I eventually located him, he apologized, complaining that he was feeling not quite up to par. (I'm not sure just what his problem was, but I understand that it may have been due to some sort of local smoked meat delicacy he chanced to sample the previous evening.)

I eventually managed to con John MacDowell into the rear seat of "Seven Seven Whisky" and off we went. I hadn't heard anything from John and Rudi on the radio other than their location, so I had no idea what the lift conditions were or what height they had reached so far.

HARRY'S HANDY HARDWARE Part 2

“Blunder Beaters for Bungling Builders”

As you will have seen in our last issue which listed rivets, Harry's considerable stock of specialized hardware for homebuilders has been a boon to many fumble-fingered first-timers. His current catalogue concludes with a listing of the most popular nuts and bolts for the ham-fisted amateur.

Harry is of course, quite aware that much of his hardware will evolve over time with advances in the state-of-the art in connector technology (bi-stable epoxies and boron-fibre zippers come readily to mind).

There is considerable research in progress, however, to develop a tool which has the potential of making much of Harry's stock obsolete! Lab models have demonstrated the feasibility of this tool, although development prototypes being researched have been beset by problems of incorporating the necessary induction heaters, interchangeable ceramic pilot rods and precision alignments verniers, etc. into an efficient, small (and marketable) package. This device is the most earnestly wished for tool since the drill was invented – the HOLE-MOVER.

With the bugs worked out, it is hoped that the hole-mover will be available in the near future. Harry will continue to supply the newest in “fixer-uppers” though, secure in the knowledge that there hasn't been a tool invented that hasn't been misused!

Tony Burton
free flight technical editor

John and I resumed normal breathing. Once again the wind was quite slack and I had to tack constantly and still had to circle now and again to drift back whenever I went too far upwind. John got busy on the radio and reported our happy position and it seemed as if we were on our way to 35,000 if this trend continued. John asked someone on the radio about notching requirements for height record claims since we did not really perform a proper notch. Now there's an optimist. John, I like your style!

We felt pretty sure that our barograph would show an adequate notch because we lost 400 feet in the 15 seconds or so from rope break to the time we reached the lift. At any rate I wasn't about to go down there again! The climb continued steadily but with a gradual decrease in climb rate, and after a while John found the radio unable to trans-

Harry's “Borderbiter” Tightfit Nut

So your hole came through right against the edge of the flange and a conventional nut won't go on the bolt? Once again, Harry has the answer with his “Borderbiter” nut designed to fit close to any object. When ordering please specify the amount of clearance available. This nut is available in a wide variety of clearance sizes from large negative to large positive amounts.



Harry's “Oops” Countersunk Nut

So you did it again? Stood on your head and countersunk the wrong side. This time however, it's not for a rivet, you have countersunk the nut side instead of the bolt head side. Harry's done it before and solved the problem with his “Oops” countersunk nut.



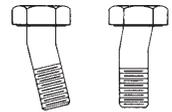
Harry's “Side-by-Side” Binocular Nut

First hole not good enough so you put another one next to it, but didn't leave enough clearance for 2 nuts. No problem. Just push the 2 bolts through, grab a “Side-by-side” binocular nut and twirl it on.



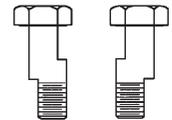
Harry's “Deflector” Off-line Bolts

Harry recommends this as the best way to handle a hole that is angled in one piece and straight in the other. It's less work than redrilling. The head is available on either the straight or the angled arm.



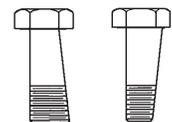
Harry's “Over-there” Offset Bolt

So you were smart enough to learn from your mistake on the left spar butt fitting but still blew it with the right one? The required number of holes on the fitting you have don't line up with those on the spar. No need to throw the whole darn spar away when a few “Over-there” offset bolts will do the trick. Harry has them available for off-sets from 1/64" to 1". Specify whether left or right hand offset is required.



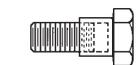
Harry's “Wayout” Sloping Bolt

Did the drill skid sideways as you tried to drill the hole without centre-punching? No need to curse the parentage of the drill or its lack of morals. Just grab one of Harry's “Wayout” sloping bolts, available for both topside and bottomside slopes, and screw on the special nut and the problem is solved. (Note: The nut for the bottomside sloped bolt is hard starting).



Harry's “Stretch-R” Telescopic Bolt

Appalled at the cost of AN bolts and upset by the large variety you need? Why carry a tremendous stock when you will still not have the one you want? Just get a small selection of Stretch-R bolts and you will have all you will ever need. Simply select the size closest to what you want and screw it out to the required length. □



mit due to cold. The exhaust valve of my mask froze solid at about 27,000 and I was glad to have John along to take the stick while I cleared the valve with my finger. That was no fun at all. Once again good ground instruction on the use of and troubleshooting of the oxygen system paid off. Thank you Walter and Wave Flights!

The lift grew weaker and weaker and we stopped climbing near 31,300 feet. We had been climbing in lift produced by the Rampart Range, and so we pressed forward for 15 miles to see what Pike's Peak had to offer. We found no lift at all but what we did find was a spectacular view of a cap cloud shrouded peak. No camera of course. The torture never stops! John took the stick for the trip back and he soon found the wave again and did a bit more soaring just for fun. Everytime he left the wave after gaining some height, he'd find it again

somewhere else and up we'd go some more. Great fun! Low oxygen eventually forced us down however, and our friend the rotor was still sitting over the field to greet our arrival. I had a great deal of fun flying the circuit in rotor using 80-85 mph as a margin above stall, especially during the final turn. Mercifully the turbulence smoothed out halfway down final approach.

After inspecting our barogram, George smilingly announced that we had set a new state height gain record for multi-seaters. Son of a gun! Not bad for a couple of wave rookies. But alas, the record would be unofficial because of our Canadian citizenship. John still has a short section of the torn towrope and I confiscated the stretched tow ring I found left on the glider hook. These originally worthless items are priceless keepsakes to John and I and are definitely not for sale! □

1982 Accidents - An Update and Comment

Ian Oldaker

Chairman Instructors Committee

During a meeting of the Instructors committee held in mid November, the accident situation was discussed and as many reports as we could lay our hands on were reviewed. We were anxious to take a broad view and to learn from them rather than to place the blame. In this regard the identities of the pilots in most accidents remain unknown. Although we reviewed perhaps the majority of expensive accidents, we did not have reports corresponding to all claims, and we only had one incident report.

This past summer has seen what many of us call an unprecedented number of accidents in Canadian soaring. Most have involved expensive glass fibre machines. They have occurred literally from coast to coast and have involved one fatality and several costly write-offs. What conclusions did we draw from them?

First, an apparent lack of preparation for the flight can be seen in a few cases. Mental and physical preparation, lack of training, and lack of an adequate briefing can be listed. Can inexperience be included? Maybe.

Mental preparation includes "am I relaxed and prepared for the unexpected?", "any arguments, however mild; just before take-off?" and "am I really thinking flying and soaring for some time (not just minutes) before take-off?" Some accidents appear to have had these contributory causes. "Peer pressure" also was a factor in more than one of our accidents.

Physical preparation includes the need to be well rested, especially prior to flying a new sailplane for the first time; four accidents involved first flights on the type. A loose object in the cockpit jammed the stick "nose down" in another – the pilot bailed out – she had apparently less than one second safety margin before landing in water.

The official investigation into the fatality listed "reduced g" as the likely main factor. Another accident to a 2-33 in which both pilots received major injuries strongly suggests "reduced g" as the cause.

Several expensive glass fibre accidents were linked to lack of basic training and/or briefings. Lack of an adequate held-off landing technique was a strong contributor

in several cases – these machines can't easily be flown on but they can be held off! Reduced 'g' considerations and flight training are in the SAC basic and advanced instructors' courses and should be covered with all student pilots. Held-off landings are the preferred landing technique, as discussed in our Soaring Instruction Manual.

Training also includes those situations where an emergency at low altitude or an unplanned off-field landing has to be handled by say a pre-licensed pilot. How many of us train our students for these situations? The "fly-around-the-club-all-afternoon" type is probably untrained for off-field landings, yet he/she tries to scrape back to the club. This area of non-training cost us heavily this year. Many clubs reportedly have one, two or three of these landings per year; training for them should be in all basic training curricula. Is it in yours? It is to be added to our basic instructors courses for 1983.

It is important that good briefings on new types be given to pilots before they fly a new sailplane for the first time. The pilot should sit in the cockpit, alone, to become familiar with its layout, instruments, knobs, levers including undercarriage for some time before taking off in it, especially if his previous experience is limited. There are indications that perhaps pilots are moving up too fast into higher performance machines; the CFI and senior instructors should have the experience and knowledge to be able to give guidance and to exercise the required influence and control in this important area.

How do we improve on the current situation? Do we wish it to improve? I believe we must, unless of course we are willing to pay higher insurance premiums and are willing to expect increasing intervention in our affairs by Transport Canada. (I will write separately on this subject, but it's a very pertinent point to consider, if we wish to remain relatively free of government constraints).

Whether a pilot measures up to his or her expected performance in a tight situation will always remain uncertain. For this reason I regard analysis of actual unusual events as crucial. Every pilot in our Association ought to report their accidents (a recommendation in this area has gone

from the Instructors committee to the Directors) and incidents so that the entire membership of our Association can profit from our rapidly increasing experience.

Many people say to me, what is an incident, why report it? An incident is an event when the pilot, by training, good judgement or luck, is able to interrupt a chain of events that would otherwise have become an accident. An incident is, for example, an emergency off-field landing due to getting lost, a rope break on tow or premature release (why did it break, release, what contributed to getting lost, etc?). An incident is also a discovery of something mechanically wrong when doing a DI (perhaps someone else with a similar aircraft should be warned?). I know it takes time to fill out a SAC incident/accident notification form, but if it saves someone else's aircraft and perhaps saves a pilot or two, is it not worth it?

There is no single institutional mechanism that will ensure timely sharing of experience in all the variety of flying we do, eg. club, competition and summer or fall camps. But in general we should expect that learning is fastest where the institutional structure facilitates exchange of information. The club get-together around a camp fire in the evening after flying is a great way to pass on the "how I did it and didn't have an accident" type stories. Clubs which have such social gatherings should be at an advantage over clubs that don't.

One mechanism of enhancing information exchange is to locate several clubs on the same site or close together. A club seems to "learn" significantly faster when it is next to "older brothers" than when it is an only child.

If knowledge is conveyed rapidly from club to club, in effect making our entire Association a single club, I should think the chances would be very good for significantly reducing the incidence of serious accidents within a few years. I can hardly think of any other accomplishment that would do more for acceptance that our Association can and should continue to run its own affairs without intervention and imposition on us of administratively complicated regulations by the government.

continued on next page



The SB-10 Still the Best

Photo and information from the Braunschweig Akaflieg booklet on their design work from 1973 to 1978.

This is the sailplane that has gained three world multiplace records for Hans-Werner Grosse, flying out of Alice Springs, Australia. The current world records, listed on page 23, tell more of those tremendous achievements over the hostile and desolate Australian desert.

The SB-9 design had been successful, with the effort to increase performance through greater wingspan. The SB-10 project was to continue in this direction, thus the 29 metre ship was born. She was built in the early 70s and is still today the biggest and "perhaps the best and most beautiful sailplane" according to Dr. Helmut Reichmann.

Completely new construction of such a big sailplane would have exceeded the resources of the group of student engineers; so it was decided to build "only" a fuselage empennage and the 8.74 m mid-section of the wing. The SB-9 surrendered its wings to become the new outer wing panels of the SB-10, that's why the 21 metre SB-9 no longer flies.

The construction of the mid-wing section meant a new technical approach. In order to keep the wing deformation within reasonable limits, carbon fibre (new at that time) was used for the spar. The forward fuselage is of steel tube construction covered with a carbon fibre and balsa shell. The rear fuselage is a light alloy tube.

The SB-10 was designed as a two-seater because the pilot must be positioned well forward of the wing to keep the cg within limits. The wing trailing edges have three different flap sections each. The flap lever activates a differential deflection over all three flaps. Both outer flaps – again differential – also function as ailerons, and the inner ones take over the landing functions. □

SB-10 Technical Data

	5 Piece Wing	3 Piece Wing	
PERFORMANCE			ELEVATOR
minimum speed	65 km/h	69 km/h	span 3.3 m
best L/D (90 km/h)	1:53	1:51	area 1.46 m ²
minimum sink (75 km/h)	0.41 m/s	0.43 m/s	aspect ratio 7.45
maximum speed	200 km/h	200 km/h	deflection ± 20°
WEIGHTS			RUDDER
gross weight	897 kg	889 kg	height 2.21 m
empty weight	577 kg	569 kg	area 2.45 m ²
payload (incl. 100 kg ballast)	320 kg	320 kg	aspect ratio 2.00
wing loading (kg/m ²)	29 - 30	30 - 41	deflection ± 35°
(lb/ft ²)	5.9 - 8.0	6.1 - 8.4	
WINGS			FUSELAGE
span	29 m	26 m	length 10.36 m
area	22.95 m ²	21.81 m ²	width 00.68 m
aspect ratio	36.6	31.0	height 00.94 m
dihedral	1.5°		gear retractable, spring-loaded
profiles	Wortmann 62-K-153 inner panel 62-K-131 middle panel 60-126 outer panel		

All SAC clubs should have a Safety Officer who is not the CFI, and whose job it is to sniff out incidents, not with the purpose of punishing or imposing restrictions on the pilot, but to learn, and to pass on the information to SAC for us all to benefit. (The Safety Officer's terms of reference are in our Procedures Manual; all club presidents have one; see section 3.14). A word here on anonymity. There is no place for the pilot to put their name on the form; if you wish to leave the club's name off it, please do so. We don't wish to have an incident "hushed up" because he/she will be pun-

ished or ridiculed. We can all learn from the mistakes of others, and the sooner we all realize that the better!

If it is a club policy to ground someone for an "infraction", the pilot will try to keep quiet. If every time someone does something unusual or that appears unsafe is he or she told off? Is it done in public? Does the complainer do so in front of others? If your answer is yes to any of these, your operation is waiting for an accident. What we need to do perhaps is to examine the club

rules to see if these are reasonable, and to see if the approach of the flying discipline is towards learning from the mistakes and errors of others, or is the approach one that makes the pilots keep quiet in hopes they are not "found out".

My hope is that a brief review of our accidents show that yes indeed we can learn and will take appropriate action to try and avoid the same thing happening again. But only if we receive timely reports can we pass on the information to others. It is up to all of us to help. □

THAT OTHERS MAY PROFIT

Eric Newsome

Chairman Safety Committee

Out of this year's crop of accidents one is outstanding for the clarity of the accident report and the analysis of causes and future prevention. For brevity, the story of the accident has been condensed: the 'Errors of Judgement' and 'Recommendations' are as given in the report.

Background

The pilot flying a strange glider for the first time from an unfamiliar airfield had the choice of landing uphill with a tailwind or downhill with a headwind. The 5000 foot runway has its south end at 6850 ft. asl and its north end at 7150 ft. asl. The ground facilities were at the high northern end. A briefing was obtained from an experienced instructor who mentioned that, as pilots landing uphill invariably overestimated approach height, he had only once lost the bet that a long retrieve would be needed.

The Accident

After forty minutes of flight the pilot flew a normal circuit for an uphill/downwind landing at an indicated airspeed of 55 knots. Being unfamiliar with the use of flaps, and being **unaware** of the Pilot's Notes recommendation of full (15 degree) flaps for landing, no flap was selected. Remembering the comment of the instructor, the pilot selected the mid-point of the runway as the touchdown point to avoid a long retrieve. Touchdown was fast, the glider ran off the end of the runway, and a swerve made in the rough to gain more stopping room resulted in damage.

Errors in Judgement

- being overly occupied with the usual tendency to land short when landing uphill, I failed to account for the strong tailwind and selected an inappropriate aiming point;
- having forgotten the effect of altitude upon an airspeed indicator, that factor was not allowed for, aggravating the initial error;
- being unfamiliar with the site and conditions, I should have taken an area familiarization flight, particularly as I was not well oriented to the local geography and was uncomfortable as a result. This disorientation was a factor in my failure to allow for a tailwind final approach;
- I did not read the Pilot's Notes with appropriate thoroughness with the results that the approach was flown without flaps, contrary to the manufacturer's recommendation.

Recommendations

- when flying in an unfamiliar area, plan the entire flight, with particular attention to the circuit, **before taking off**.
- when flying out of a field without previous recent experience in the area, take an area familiarization flight with a qualified pilot;
- when flying a ship without previous recent experience on type, read the Pilot's Notes thoroughly, with particular attention to take-off and landing recommendations;
- when landing at high altitude fields, remember to allow for ASI error;
- when accepting a ground briefing, or at any time do not allow comments about convenience to interfere with safety considerations. Those who walked the

- quarter mile or so, or waited for a ground retrieve, didn't damage their ships;
- don't assume you have enough room. **Be Sure!**

Comment

A reasonable set of recommendations that could well prevent future problems for many of us. However, two points should be noted: a) the advice not to allow comments about convenience to interfere with safety has another side - do not, when briefing pilots, make irrelevant comments and (b) the advice to allow for airspeed indicator error seems simple, but what does it mean, how do you correct, or can you? A good topic for a safety article. Any volunteers? □

A GLIDING AVIARY

AERONAUTICUS OVERCONFIDENSUS



There is hope for fledglings but none at all for the Aeronauticus sub-species known as 'Overconfidensus'. This bird is usually found in gaggles on days when thermals are rare (and crowded), spiralling merrily upward with head and eyes caged in blissful ignorance of other gliders. If you feel in need of stimulation get into such a gaggle and meet one of the species head on, at the same altitude and when he is circling in the opposite direction to every other glider in the thermal. Don't be afraid of startling him, he knows he is alone in the big blue sky and will never see you.

A cardinal rule of the air is to see and be seen. As there is no way of being sure that you have been seen, it is wise to assume that every other pilot is a fool and a blind fool at that. With 'Overconfidensus' this is an accurate assumption. The air gives freedom in dimensions unknown to the ground-bound, but it also gives the possibility of trouble from all angles.

Here's to 'Aeronauticus Overconfidensus', may he follow the dodo bird into extinction. Until he does, keep swivelling. □

TROPHY CHANGES



Tony Burton

If you will re-read the article George Dunbar wrote in **free flight** 4/82 page 2, you will see that he addressed some problems with the SAC flying trophies and proposed some changes to the scoring system. His proposals were considered by the Board at the October meeting and largely accepted. These changes are outlined below. It was also recognized that changing the scoring system alone probably would not completely solve the persistently poor response, and that some fundamental restructuring of the trophy awarding system was required. George, as the Awards committee chairman, has been given the job of working on this.

THE SCORING CHANGES

Beginning in 1983, the following scoring changes apply to the BAIC, Canadair, the "200", and the Stachow Wave trophies.

1. The basic Distance points (**Db**) remain unchanged (1 to 1.5 per kilometre depending on the type of course).
2. The basic Distance points will be multiplied by the recognized Canadian glider handicap factor (**H**) given in section 3.15.2.26 of the SAC Procedures Manual. This is done to encourage the newer cross-country pilot competing for the "200" trophy in a club 1-26 for example, and roughly evens out the odds for contenders for each trophy.
3. The basic Distance points will also be multiplied by a Speed Factor (**SF**) equivalent to 6 per cent for every 10 km/h over 70 km/h according to the formula:

$$SF = 0.58 + .006 S$$

where **S** is the speed in km/h. The constant value (0.58) was chosen to make $SF = 1$, for $S = 70$, but slower flights will not have points reduced. A flight completed at 88 km/h would earn a speed bonus factor of 1.108. Also, in order to simplify the claim documentation, the start time is to be taken as the tow release time (or the

take-off time if release was not recorded), and no 1000 metre maximum start altitude is necessary. Of course, if the flight is being conducted to normal FAI rules for other reasons, then FAI-observed start times are proper.

4. Altitude points may be scored according to the following formula:

$$A = 4H(H + 10)$$

where **H** is the height gain in kilometres. Note that the points have a squared relationship to the height gain, hence more points are earned at the top end of the climb than at the bottom. This recognizes the greater difficulty in gaining height at the top of the wave. The constants were chosen to roughly equate the points earned in a Diamond climb to a 300 km free distance flight. For example:

H = 1 (Silver Alt.)	A = 44 points
H = 3 (Gold Alt.)	A = 156 points
H = 5 (Diamond Alt.)	A = 300 points
H = 7	A = 476 points

The following restrictions also apply:

- A flight cannot qualify for both altitude and distance points,
- In order to maintain the importance of cross-country flights in winning the "200" and Canadair trophies, at most two altitude flights may qualify of the five submitted,
- In order to minimize the luck factor in wave flying, the two flights cannot be claimed on the same day.

5. The Altitude points or the basic Distance points will be multiplied by a factor of 1.2 for any flight which breaks a Canadian territorial record. This both recognizes the extra skill and effort that goes into a record flight, but also is meant to encourage pilots to upgrade and fill in the blanks of our current record table.

SUMMARY

Trophy claim flight points are earned according to the formula:

$$\text{Points} = (\text{Db}) (\text{H}) (\text{SF}) (1.2) \quad \text{for height} \\ = (\text{A}) (1.2) \quad \text{for altitude}$$

SEND YOUR CLAIMS TO GEORGE

Since the Trophies chairman is no longer responsible for handling SAC Statistics, and to consolidate the trophies responsibilities, George Dunbar will accept all trophy claims beginning in 1983. Jim Oke was willing to relinquish this duty, and I thank him for handling the claims job for the past few years.

TROPHY AWARDING PHILOSOPHY

SAC recognizes that the trophy structure is in need of an overhaul. If the dearth of claims for the flight trophies is indicative, then many SAC members place little importance on them. Regarding the flight trophies, the Board questioned the practice of individuals **applying** for a trophy, in effect rather than having it **awarded**. This is a valid philosophical point. It brings to mind questions such as, "Who is going to bother sending in a claim for the BAIC trophy after hearing of a 800 km flight being completed?" What **would** be "embarrassing" is having the trophy awarded for a lesser flight if the 800 km pilot didn't bother to put in a claim!

Another observation has been that pilots seem to get more satisfaction from awards presented to them by their local – not national – peers. The club's "best flight" trophy can mean more to a new pilot than the "200", if the "200" is presented (in absentia) at an AGM on the other side of the country. So some questions need some answers:

- Should club CFIs/Senior OOs recommend club pilots for flight awards rather than the individual him/herself?
- Should a SAC trophy be awarded at the AGM, or should it be done through a presentation at the pilot's club?
- Do we really need some of the present trophies.
- Should SAC recognize a broader range of achievements and volunteer effort?

These are some of the things that the Trophies chairman has been asked to consider in the near future. If any of you have any ideas, comments, or suggestions regarding trophies, George would be most happy to hear from you. □

CLUB NEWS

PIONEER CLASS COMPS?

C-GOON, Doug Girard's Pioneer II at Bluenose, has been sold to a syndicate in Winnipeg. Since Bill Payne in Winnipeg is building a Pioneer, and C-GLUV (aka Luvverboy) is flying regularly, would the WGC consider holding a Pioneer contest at the next Manitoba Provincial Soaring Meet, or how about formation flights?

Ted Lightly

PS to Kemp Ward of Missisquoi: perhaps you should consider a move to WGC for some real competition (see Kemp's story in 4/82 page 6).

REGINA'S COWLEY ODYSSEY

Off to Cowley to search for the "Wave". ZDF, the Regina Gliding Club's 1-26 was packed up, checked and double checked to be sure nothing was left behind. The oxygen tank was hooked up and strapped down, earth auger type tiedowns were along and lots of good strong rope. The reputation of Cowley winds and the hope that they would be establishing strong wave kept the anticipation level at maximum.

For my part, apprehension kept the anticipation company as we set off for the 800 km to Cowley. As a recently licensed glider pilot I was looking forward to my first high altitude flying in mountain wave. However, slope soaring with radio-control gliders had made me familiar with dozens of ways to fall into sink either ahead, behind or below wind generated lift bands. I was also aware of the extreme turbulence that can be generated, and I restored to moderating the apprehension by assuring myself that full size gliders are not as easily affected as models.

Arriving Friday noon the weather was disgustingly great with no sign of wave except rumours that there was some the day before. Not surprising, because same as fishing, they always bite best the day before.

Anyhow, great visiting and time for field familiarization flights in the afternoon and evening. The wind gradient at Cowley field really is something even when prepared for it. Expecting strong winds, the glider was well anchored for the night. Even the trailer was tied down as there is no point in securing the aircraft and allowing a trailer to blow around a flightline.

No luck! Beautiful sunny and moderate fall weather settled in for the weekend and prospects of wave flying faded. The weekend had to be salvaged by some really enjoyable thermalling over new terrain, great visiting, a treat to see a good variety of sailplanes, and a satisfying meal at Turtle Mountain Inn with a spirit of camaraderie over all to compensate for the absence of wave.

Thanks goes to the Edmonton crew for the opportunity for a familiarization flight in their club Blanik. The opportunity to fly a different ship ranks as a great pleasure along with having pine trees off my wing tips while flying over the Porcupine Hills. After flying flat country it is a treat to head for a sunny hill slope facing the wind, confident that there will be lift above it. All in all a great experience and an enjoyable flying weekend thanks to the Alberta Soaring Council.

Ron Lien
Regina Gliding

DISASTER SEASON AT WGC

When I agreed to write the annual club news wind-up for WGC again this year, I had no idea it would be such a tough job. This has not been one of WGC's better seasons – one twenty year veteran says it's been the worst he can remember. The weather simply refused to cooperate. It started with a late snow storm in April that delayed the season opening until past mid-month. Even the Manitoba Soaring Championships had to compete with the weather to get enough flying days to make a contest. However, Russ Flint won the Championship class and Fred Kisil the Sports class.

Then late July things really turned the pits. The number of weekends we've had rained or winded out were enough to make even the most dedicated flyer give up gliding in favour of stamp collecting or some other indoor sport.

But the weather is not the only thing playing havoc with WGC's morale. This year we have been shocked three times to learn of accidents at our field that resulted in injuries and destroyed aircraft. Two club gliders and a private ship have been lost. Fortunately, all those who were hurt have recovered. The Safety committee reviewed each accident carefully and critically, looking for weaknesses in our training and

operational procedures. Several small changes have been made already and others may appear next season. Our club executive, training, and safety personnel, are conscientious and dedicated to making gliding as safe and enjoyable as possible. They are all to be commended for their efforts. But these people can't do everything. The final onus in preventing accidents lies with us – the pilots! The three accidents are directly attributed to human error – a series of poor decisions after accidental low-altitude release, an under-shoot, and jammed glider controls (see "Bail Out" on page 8). One final remark – the life of the pilot of the private sailplane who was forced to bail out of an uncontrollable aircraft, was most certainly saved by the parachute. So make sure your 'chute' is serviced regularly and don't leave it at home.

Early in the season the club replaced its aging Stinson towplane with a Citabria. After each accident we managed prompt replacement of the glider so that our flying program has suffered little interruption. Despite the heavy financial drain, the club is still solvent.

And there was yet another accident, but of a less serious nature. One of our regulars at the campsite was heating an unopened can of beans in a pot of water in his camper while discussing the day's flying with friends over a beer outside. Well he forgot; the water boiled away; the pot melted; and when she blew we thought we were all done for! Beans everywhere and a dent in the roof to boot! Who said beans and beer don't make an explosive combination?

Fortunately, not all of '82 was bad news. We had 100 guests attend our spring open house, talked 35 of them into signing up, got 14 past the MOT exam, and convinced 14 into going solo. Four reached licence standard. Our ex-CFI Ian Oldaker was back at our field this summer to run an advanced instructors course. We had a camera crew out from a local TV station to record some of our activities for a documentary on soaring. The twin-engine Lazair ultralight still takes to the air occasionally when gliders are not flying. And we now have a second Pioneer syndicate at the club. Oscar Oscar November (the 'GOON' squad) to challenge Gulf Lima Uniform Victor (the fur-lined 'GLUV').

I would like to close with a quote from the COPA Safety Bulletin: "Aviation in itself is not inherently dangerous. But to an even greater degree than the sea, it is terribly unforgiving of any **carelessness, incapacity or neglect.**" We at WGC have had this message driven home more than enough times this season. We are all looking forward to and working toward a better season next year.

Safe Flying
Bruce Wilkin

DEEP RIVER UPDATE

Bonnechere Soaring would like to thank all those who took the time to reply to our request on whether a sailplane such as the L-13 could constitute a basic trainer. The letters and articles were much appreciated and read with great interest. They have given us much food for thought.

The 1982 season got off to a good start despite stuck valves in our towplane. We had about ten summer students from Atomic Energy which kept our instructors, the 2-22 and L-13 (for one or two) busy. One of our junior members, Sean Walmsley, went solo a few days after his fifteenth birthday. I might add, on that day he soloed in the L-13, 1-26 and 2-22!

Cross-country flying has been extremely limited this year, due partly to smallness of the club, lack of personal time of those tempted, and weather. Several flights though were made within 50 km radius – rather minor by many areas' standards.

August 22, after a good day of flying and before we lost our summer students, we had a very successful club barbecue on the hangar apron along with a roaring campfire and a good sing-song. The success was due to Jean Bigham's organization. In late August our good season was slowed down when we lost our towplane for six weeks due to a ground loop incident (very minor damage.) After being back in operation, the weather failed to cooperate and the rest of the season was not very good.

Iver Theilmann

SOARING MISSISQUOI STYLE

Our members have been on the road. Tom Matthews was out in Calgary during the summer on business and told us about the 13,000 foot thermals, etc. etc. Bob Hyam, who took his family to Australia from Asbestos, Que, wrote us about winching regularly into thermals, and flying amongst ground debris sucked up – including twigs! He didn't go so far as to say that the air was full of barn doors and lost aborigines, but we are given to believe that the lift is strong down-under.

I should let other clubs know that we have wave here often. I recall one that was encountered at 2000 feet agl over the field after a shower. I circled in lift for several minutes until I noticed a wall of cloud running 15 miles up and down the valley. Turning towards the sun, I hit 300 fpm+ lift and soared the cloud face to about 9000 feet before breaking off for the next passenger ride.

The camera was in the car, naturally.

Other members have flown to well over 13,000 feet, and when there were several of us up at once, it was exciting to fly together. The wave is encountered just over the parking lot at the Jay Peak ski area, one-half mile east of Sutton Mt, and a quarter mile behind our field (the tertiary, perhaps). Our most consistent thermal lift on weak days occurs in this area, encouraged by the wave action I believe.

The '82 flying season was noteworthy for the continued successful cooperation of Club de Vol à Voile Appalachiien and our club, the increase in the numbers of tow pilots, the relaxed atmosphere, and finally the financial situation.

No noteworthy X-C flying was done, but not for lack of plans. Our longest flight was by Marc Lussier who flew 4 hours 18 min sans barograph one day. My own Pioneer II seemed to be grounded continually for mods to the tow hook or some other picky detail, but now it is serviceable and could go today if it weren't for the cold and the snow – next year looks good from here. Our Quebec Regionals may be held east of Montreal nearby where landing fields abound, so we are hoping to introduce some of our pilots to the excitement of competitive X-C flying.

At our year-end party Giselle spread the rumour that our local Arab millionaire was going to buy the airfield. We worried about this until he arrived in the dining room, and it was Marc, in burnoose and moustache! There is a fine spirit amongst the younger members that augers well for our future. Scott Campbell was a fine master of ceremonies at the party, and performs nobly as towpilot during warmer times.

Kemp Ward

BULKLEY VALLEY NEWS

Throughout the season we had some good wave and excellent thermal soaring in the area, with half-a-dozen flights to 12,000 and over, and many thermal flights to 6-8000 feet, with several flights lasting 3-4 hours or more. No cross-country flights were attempted.

We had one first solo (Sue McLauchlan) and three conversions from power (Terry Halverson, Ed Morrice and Ted Brand), plus Don Ecker and Stephen Lewis who we trained to almost solo stage. Stephen is now flying solo in the Seattle area.

We took some 150 members of the public for a flight. We had a total of 185 flights in the B4 and 745 flights in the Blanik, with 930 in the Super Cub. We added 102 hours to the B4 and 228 hours to the Blanik. A busy season!!

We continue to work with the B.C. Soaring Society to improve soaring in BC and Canada. We attended a couple of meetings in Vancouver and Doug Carson is now the President of the BC Soaring Society.

As happened last winter, there will be a Ground School during the winter months. Starting in January it will run for 12 weeks and will be under the auspices of the N. W. Community College. It will be open to the public, but will be offered to members of the club at almost no cost.

The club continued to grow in experience and membership, and after lots of winter maintenance we look forward to a successful season in 1983. The Blanik has been derigged for the winter and will reside on a trailer in the Carson's backyard.

Thanks are due to all who helped the club throughout the season!!

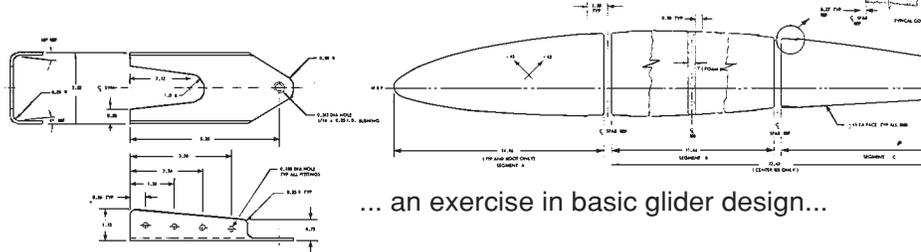
STOP THE PRESS On 13 November, Paul Chalifour contacted the house wave off Hudson Bay Mt. at 1500 feet agl, climbing excitedly to 21,000 feet. Paul had to leave the awesome sight on top with approaching nightfall. Congrats for a fine Diamond, only the second one earned within BC.

Sebring Soaring Center Florida

THE RECREATIONAL



SAILPLANE



... an exercise in basic glider design...

Tasso Proppe

from the Sailplane Homebuilders Association magazine, "S.H.A.p TALK"

Competitive soaring today is a contest of who can fly further and faster at any cost. Championships have developed into a competition of outspending each other for fiberglass and carbon spars and expensive, sophisticated electronic instrumentation. This has its space in furthering our technological reach and pushing the state of the art.

But what about me? I want to soar about on a Sunday afternoon without having to spend a fortune. Just for recreation. No desire to beat somebody. To enjoy the thrill of flying on Mother Nature's energies and sharpening my skills to be able to do it.

To fly on a smaller budget means lower performance (L/D costs \$\$!) You can't buy these simple ships any more, you have to build them yourself.

However, lower performance becomes expensive in another way: you have to buy more tows because you come down more often, and you have to stand in line waiting for another tow. So, this recreational system must be self-contained, self-launching, ie. independent of towplane, towpilot, line crews, and retrieve crew.

Now, if you ask for power to take off on your own, it should be affordable! (in the 15 to 25 HP region), and that determines the wing loading of what you want to build and fly. What you end up with will be a "Low-cost, Home-buildable, Self-launching Sailplane."

There are other parameters of the design which, to a degree, are dictated by personal considerations or tastes. The working space of my garage determines the wing span I can afford to build; and ease of transportation and on-site building time may overrule the desire for greater aerodynamic perfection.

Going through the mathematics of this, it comes out to be a slow glider – that is a

fact that seems to be difficult for the dreamers to accept. To be brutally frank, if you want to travel far cross-country, put your creation on a trailer and tow it there. Competition should not be ruled out in this context, but it should be in rivalry with efficiency. Here is the formula for efficiency:

$$\frac{\text{how much you get out of something}}{\text{how much you put in}}$$

Both the numerator and the denominator elude our common measuring methods. Flight time, flying days per year, accumulated distance, pleasure (how do you measure pleasure?)... versus money, building time, the car rusting outside the garage, marital strife, ruined clothes and the frustrations of trying to read drawings or figure out loads.

Like a beauty contest, there will be a range of opinions and preferences; but that's the way we elect beauty queens and presidents. So, I think we should be able to reasonably assess the efficiency of our homebuildable, self-launching sailplane design too.

To start off, I am going to throw out some pertinent figures as I have experienced them during the past decade of evolution from "motorglider" to our present ("ultralight") self-launching homebuildables.

Span

33 feet (10 m). The working space of my garage is 17 feet, that would fit a two-part wing, or the folding wing with a 50% centre-section.

Empty Weight

I measured these:

Mitchell B-10	MC 101 engine	150 lbs
Mitchell U-2	Honda 250	300 lbs
Wanderer	Yamaha 100	190 lbs

So I think I can start off with some 200 pounds, and watch it grow.

Payload

Pilot is 180 pounds, making an early gross of 380 pounds, but extras are required: electric starter motor, battery, radio, chute, heavier engine – airplane designs just grow heavier during their adolescence. I assessed an additional 100 pounds for all this, so the gross I use for stress analysis and any further math is 480 pounds.

Wing Loading

From a variety of compromises between power requirements, operating speed, take-off from unimproved surfaces, picking up thermals from low altitudes (800–1000 feet), the wing loading should not exceed 3.5 lbs/ft². This probably causes the most heated arguments – but I remain firm on this at least for the next generation of designs.

Wing Area

The wing area equals: 480/3.5 = 140 ft² for a 33 ft. span.

The aspect ratio is: span²/140 = 7.8

Depending on the design's aerodynamic "cleanliness", the gliding angle L/D will be in the order of 15 to 20; let's choose 17, and the speed will be:

$$V_{\text{stall}} = 19.75 (3.5/1.3)^{1/2} = 32 \text{ mph (lift coeff.} = 1.3)$$

$$V_{\text{max L/D}} = 41 \text{ mph (lift coeff.} = 0.8)$$

$$\text{Sink rate at max L/D is } 41/17 = 2.4 \text{ mph} = 212 \text{ fpm}$$

The minimum rate of sink will be a little less than that, say 200 fpm at a slightly slower speed (say 39 mph).

The power requirement for this imaginary but feasible glider works out like this: to offset the minimum rate of sink (200/60 = 3.33 fps), we need power equal to the gross weight times the sink, or 480 x 3.33 = 1600 ft-lbs/sec. Assuming that the propeller is 50% efficient, the power required just to maintain height is 3200 ft-lbs/sec which is equivalent to 5.8 HP. If you want to be able to climb at the same angle (17:1 or 200 fpm) you have to add the same amount again for sea level performance, and add a little more for higher altitudes and hot days, and you can see where the requirements for 15 to 25 HP comes from.

That's it, keep in mind if you change any one of the parameters of this design, then all the others will change in accordance with the basic mathematics. More performance is going to cost in money, man-hours, and development time. It also causes shop and transportation problems.

Yes, there are promising designs under way, like the ones coming out of the Soaring Society of America design contest – but when will kits be available? □

OPINIONS

continued from page 4

WIDE SKY PREFERENCES

What do glider pilots want to read about? As editor of free flight you must constantly be confronted with this problem as the recipient of gratuitous advice on the subject from all sides. At the risk of adding to the confusion, let me tell you some of the things that I have enjoyed, and a few areas which could also be covered.

Perhaps it's a little provincial of us, but competition reports leave us cold. It's not that we don't wish the participants well, but between not knowing them personally and not being into that kind of event, we tend to skip lightly over these reports. However, as **free flight** is the official organ of SAC, it is obviously something you should be covering. I guess it's a matter of emphasis.

What I did enjoy was the recent article dealing with the early days of gliding. The club news section is very important. It's one place in the magazine where just about anybody can get recognition for anything. I would suggest that any club which does not have a person delegated to file news (and pictures!) to **free flight** for this section, should do so forthwith. First solos,

meritorious service by towpilots or CFIs, impressive cross country flights, all these are things that the subjects are pleased with and to have their achievements put into immortal print is just the cherry on the cake. Newspaper clippings and pages from free flight have been cherished for years for the sake of a one line mention!

I guess the 80-20 rule applies as much in gliding as in general news, 20 per cent of the people get 80 per cent of the ink. But all those guys in the 80 per cent are out there doing their bit for the sport and if it isn't recognized in **free flight**, there's nowhere else. (*Not a word about that 80% will be printed if they don't write.* Ed.)

As somewhat of a neophyte to the world of aviation, I am still reading accident reports with great dedication, in the hope that some bloke's misfortunes will spare me one of my own. Any articles on safety or technique get well read then. (Also the classified ads!).

Having said all that, I write only because you solicited my comments and not out of any feeling of dissatisfaction. Personally, I am happy with what you are putting in **free flight** and wait for a quiet evening to read it from cover to cover.

Nigel Hannaford

MY SECRET ADMIRER THE MATHEMATICIAN

...It was just that the probability of running into a lovely woman who is always smiling, has a literary bent, and is wild about flying sailplanes is mighty low. I calculate the odds at something of the order of one in a billion, or less. The way I arrive at this is that the probability of being pretty is no more than one in ten, the probability of smiling a lot is less than one in ten too, the probability of being literary (in the USA and Canada at least) is no more than one in a hundred, and the chance of a woman being wild about soaring is less than one in a million (based on the fact that we must have something like 100 million women and less than 100 of them are avid sailplane pilots).

Mathematicians multiply these probabilities together to get what they call the joint probability that all of these things will happen, ie. $1/10 \times 1/10 \times 1/100 \times 1/1,000,000 = \dots$ Oops, I goofed, the probability you exist is one in ten billion rather than one in a billion. Since there aren't that many women in the world, you must not exist. Sorry!...

Bob Moore
Richland, Washington

Thank you, Bob, I must be an angel then.

**MOLSON
BEER AD**

HANGAR FLYING

DG-300 INTRODUCED

The DG-300 (in contrast to the DG-101) is specially designed for competition, and Glaser-Dirks are confident that the DG-300 will offer better performance than the best Standard class sailplanes available today. Nevertheless, ease of control and comfort will not be inferior to the DG-101, and it will cost about 20% more. The most important changes between the DG-300 and the DG-101 are:

A completely new, thinner profile section, developed by DFVLR Braunschweig, and using the newest technologies, including boundary layer control.

In contrast to former wing profile sections, the DG-300 profile is also designed for less bug and rain sensitivity. To get there, numerous wind tunnel tests have been done at the Stuttgart laminar wind tunnel (Prof. Wortmann, Dr. Althaus).

The wing planform is a triple trapezoid which comes quite near to the optimum (elliptical planform). Also the new wing tip shape will contribute to minimizing induced drag.

The wing-fuselage junction is rounded and the wing positioned backward as much as possible to reduce interference drag to improve low speed performance.

The cockpit is widened by 2 cm like the DG-400. This results in more comfort without a performance penalty.

The fuselage is shortened 20 cm as competition pilots found that the directional stability of the DG-101 was too good.

The rudder chord is shortened to 44 per cent of the total to reduce rudder forces. The total surface of the vertical tailplane is a little bit bigger than on the DG-101.

The airbrakes are bigger than those of the DG-101 to provide even easier and steeper finals.

The DG-300 will be certified for a gross weight which is 80 kg higher than the DG-101 to provide outstanding high speed performance for super weather conditions. To achieve this weight, water bags, or 180 kg water, are available (130 kg water bags are standard).

The DG-300 will provide equal thermalling performance of the DG-100 which is known as an outstanding climber, and will show equal performance up to 170 km/h (at the same wing loading) to a 15 Metre class ship.

Delivery of production DG-300 is planned to begin in mid-1983.

USE OF WATER BALLAST

The September '82 issue of Australian Gliding contained an article titled, "The Use of Water Ballast", by Garry Speight. He went through the math using an Astir CS as an example, and the following factors were considered:

Effect of Ballast on MacCready XC speed

For normal thermals (requiring bank angles less than 40 degrees), the cross-over value of the average climb rate which would give an advantage to a ballasted ship was 3.2 knots. A ballasted ship would suffer a 20% reduction of cross-country speed in 1 knot conditions, but in strong conditions the curve flattens out, and the speed advantage never reaches 5%. For "narrow" thermals requiring steep turns (greater than 45 degrees), the cross over is about at the 5 knot climb rate and in the strongest lift (10 knots) gives only a 3% gain. So far, ballast scarcely seems worth the trouble and expense.

Dolphin Soaring

The author outlined a 1977 OSTIV paper on dolphin flying. The analysis showed that there was a small benefit to the ballasted glider, but only if one assumed a high proportion of lift along the flight path.

Thermal Search Range

The author suggested that the chief advantage of ballast lay in the extension of search range it afforded the pilot as a result of the glider's increased 'penetration'. Most fully ballasted gliders will have about 11 % more range, hence a greater chance of not only intercepting a usable thermal, but of increasing one's chances of using only the best thermals. In X-C soaring there is a heavy penalty in being forced to scratch.

Conclusion

The multiplicative effect of increased MacCready speed and search range ratios over non-ballasted ships indicated that use of ballast can yield a 15% advantage in strong thermal conditions, and that the break-even point would come at about 1.6 knots, or 2 knots for narrow thermals.

TOP CADET GLIDER PILOT

Air Cadet David J. Mercer of Pointe Claire, Que. has been named 1982 winner of the Jonathan Livingston Seagull Trophy, presented annually by the Soaring Association of Canada to the top Air Cadet glider pilot trained in Canada.

Air Cadet Mercer took basic gliding training under a Canadian Forces-sponsored summer program operated at St. Honoré, Que, qualifying for a DoT glider pilot licence and the Air Cadet gliding badge.

This past summer the Canadian Forces operated five Air Cadet Glider Pilot Training Schools across Canada and graduated over 300 glider pilots. The top cadet at each location later went to the Schweizer Aircraft Corp. school at Elmira, N.Y. for more advanced training.

During a special competition held at the Schweizer Soaring School, Cadet Mercer topped the group as the outstanding cadet and received the Schweizer Trophy.

A QUESTION FROM BONNECHERE

...membership remains a serious problem for us, but we struggle on. Unfortunately, this has an effect on our ability to do things as we get spread quite thin on the necessities.

In your travels have you come across a good format for keeping track of maintenance on sailplanes (other than DIs)? We had an incident where lack of sufficient maintenance was a possible contribution to a potentially dangerous situation. Consequently, we intend to try and tighten up in this area. We have some ideas but are open to the experience of others.

Hope you had a good soaring season. With conditions like Kevin Bennett described in the last issue, how could you not have!...

Iver Theilmann

TWO WORLD RECORDS CLAIMED IN NEW ZEALAND

Dick Georgeson and his wife Helen are claiming world records for multiplace goal and straight distance for a flight of 1018 km in a Janus 2C on 31 Oct 1982.

Dick was one of three New Zealanders on 14 Jan 1978 who each flew a Nimbus 2 the length of both North and South Islands to jointly claim the straight distance to goal record with flights of 1254 km. Their story was written in the April 1978 SOARING magazine. At one point in this epic flight, Dick slipped out of the wave system generated by the Southern Alps and became stuck for 3 hours while his comrades sped north. Discouraged, he radioed to Helen that he thought it best to give it up. Her reply became a famous bit of crew lore:

"You are not to be talking about landing, you are to get going!" So he did.

This time, George and Helen launched from Alexandria on South Island and headed north. A little over 8 hours later, after flying across the open waters of Cook Strait (25 km at the narrowest, but 70 km between safe landing areas) they landed at Gisborne, their goal. The 1018 km flight was completed at a speed of 125.5 km/h.

BLUENOSE CHECKOUT PROCEDURE TRANSITION TO THE 'HOT' ASTIR

Since club gliders of higher performance level will be appearing at Canadian gliderports in the future, we would like to share with you our check procedures for pilots transitioning to these ships:

1. For the pilot moving up from K8 type machinery, the first few flights should be done in calm air. The rate of acceleration once the nose is lowered is pretty dramatic. We put our pilots in the glider, canopy down, and raise the tail to show the small angular change between 50 and 80 knots.

2. The nature of the forward visibility during final should be carefully discussed. The change in fuselage shape that came with the Open Cirrus era changed the downward and forward visibility in a significant way. If a pilot in the Astir tries to get the same expansive amount of real estate that is visible downwards and ahead from the front seat of the K7, for instance, he will have 80 knots on the clock in no time. Once this is seen, the tendency is to correct by hastily pulling back on the stick. The runway then disappears out of sight under the nose. The pilot hurriedly lowers the nose and he is back up to 70 knots or so. This combination has him in PIO (pilot induced oscillation) territory with the runway fast approaching. This aspect of the forward view is carefully explained with the precaution that one has to expect and accept a reduced forward-downward view.

3. The wingtips are much closer to the ground than those of the K7, K8, or 2-22 and thus the roll attitude has to be carefully monitored. This was demonstrated by alternately touching the wingtips to the ground with the pilot in the cockpit.

4. Checkout flights were performed in the K7 in turbulent conditions to see if the pilot reacted to every bump or if he reacted only to those that changed attitude. This check was suggested to us by Ian Oldaker and was helpful in identifying pilots who might have "pitch-twitch trouble."

5. The wheel-brake is at the end of the dive-brake handle travel. If the pilot over-enthusiastically tries to pin the glider on the ground at touch-down (tempting on the second or third touch down on a bounced landing), he can tip the glider over on its nose.

6. The relationship between the angle-of-incidence of the wing and the angle-at-rest offered by the undercarriage is such that the aircraft touches down well above stall even if fully held off. Thus, a bump, gust, or abrupt stick movement can

have the ship flying again. It was pointed out that the "waiting-for-takeoff" view of the horizon and the "waiting-for-touchdown" view were identical.

7. It was also pointed out that the higher touch down speed mentioned above plus the low rolling friction of an aft cg sailplane equipped with a pneumatic tail wheel results in a somewhat longer-than-expected roll out.

8. The crosswind/aft cg situation was explained, and check flights were done in a K7 to ensure that the pilot could land in a 70 to 90 degree crosswind (a typical situation at Stanley) with no drift at touch down.

This has so far proved to be less a problem than anticipated. Recently, a pilot landed the aircraft in a right-to-left 70 degree crosswind of 10 knots, while being forced to the extreme right of runway 27 by a power plane taxiing on the left. This caused the right wing to mow down the taller greenery in the infield. Even this combination did not cause difficulty during roll out.

George Graham

LIMP LIB

Composed by a gentleman, admittedly "green with envy," on news of a lady earning her Diamond altitude.

To the best of my ken
The women and men,
Though differently lined,
In a glider confined,
Can fly with an Equal precision.

But in climbing to height
On a Diamond badge flight
I consider it best,
To encourage the rest,
And claim records in the
Women's Division.

Flying in the sexless skies
How we love to rationalize.

SOSA RUNWAY MARKERS

Longtime SOSA member Bob Carlson has come up with a clever idea you might like to share with your readers. The runways at SOSA are marked with those orange plastic cones one sees being used by telephone workmen and in many other places. Trouble is, whenever the grass gets cut these cones get moved in order to let the mower get by, and they don't always get put back where they were. As the season progresses, those neat straight lines get pretty ragged.

Bob's solution: first he used a transit to set the cones in perfectly straight lines. Then he set a concrete patio block into the turf under each cone. These blocks are set flush so the mower will pass easily over them. Now it is easy to get the cone back exactly where it belongs.

Dixon More

Sub-Gravity Sensations

continued from page 7

was thrown out into the straps so that he had difficulty in reaching the stick in the forward position. He was able to recover after several hundred feet of dive and arrived back at the launch point looking rather pale. All the girl could remember about stalling was that it produced an unpleasant if not frightening sensation and that the recovery was 'stick forward'. Of course we have no means of telling how she had been taught about stalling but the incident certainly showed the need for proper instruction and regular practice.

About this time it was also realized that some instructors had been using the words 'stick forward' for both the action in the event of a cable break during the steep climb of a winch launch and also for the recovery from a stall. This encourages a violent and rapid reaction in an emergency and at least one fatal accident and many serious ones have occurred following a cable break at low altitude when the glider has hit the ground before the pilot had time to control his prompt reaction. Reacting with a semi-automatic movement like this is extremely dangerous at low altitudes and we **never** now teach or use the words 'stick forward' for cable breaks or stalls. Rather we emphasize, 'put the nose down or lower the nose into the approach attitude' and for a very low level cable break, that the glider must be levelled out immediately, taking care not to drive it into the ground.

Most important, we should emphasize that the pilot should look ahead over the nose during the winch launch and only give a momentary glance at the instruments to read the airspeed indicator. This ensures that in the event of a cable break he will have a position visual reference during the pitching movement so that the sensations are minimized and that the nose is only lowered to the required attitude.

Not only does watching the ASI result in violent sensations during reduced 'g', but the aircraft may pitch into a very steep dive long before there is any appreciable increase in speed. When the pilot looks up at the ground ahead expecting it to be in a relatively shallow position, in addition to the rather frightening sensation, he will be confronted with the ground rushing up at him at a totally unexpected angle. An inexperienced or under-trained pupil might well panic for a few seconds.

All pilots, however experienced, are liable to visual disorientation flying in conditions of broken cloud or poor visibility, and the dangers of launching into low cloud and hill soaring in these conditions should be stressed during training.

Only a careful flying check will reveal those qualified pilots who are at risk. Perhaps it is time that every pilot, however experienced, was given a test in order to reduce the risk of further unexplained dive-in accidents in the future. □

In Part 2 in the next issue, Derek concludes with a discussion on how instructors can deal with this phenomenon. Editor.

CANADIAN GLIDING TEAM GROUNDED?



This year, the World Gliding Championships will be in Hobbs, New Mexico. It's a contest that would enable our pilots to use their own equipment, a contest that won't cost the pilots much money, and won't cost the Soaring Association of Canada one cent. Not one cent. But our pilots may not attend.

The Government of Canada has informed us that, if our team travels to Hobbs and competes in the championship in which South Africa participates, they will withdraw their financial support. Not just the funds that might be used to support our International Team, but **all** funds. Funds that are used to support our instructors programs, to help us with the SAC office, salaries and running expenses, and even help to publish the magazine which you are now reading. It's not a lot of money ... about \$25 for each member of the SAC, but it may be withheld if our pilots turn up at Hobbs.

The Directors of the SAC are facing a serious dilemma and, unless they hear from you, rather than lose Government funding, they may decide that they have to keep the money coming, and effectively ground our team, and we think it's wrong. It's wrong because politics and gliding do not mix.

We have participated with pride in Championships where the Soviet-controlled countries would not compete because pilots representing South Africa were flying. In West Germany, we all applauded the Polish pilots who competed in defiance of their government's position. This year, the pilots of our International Team would like to oppose our politicians and we'd like you to back us up.

We would like the SAC Directors to maintain a good relationship with the Government, but if necessary, end the financial romance. We should be able to make important

decisions without having to consider the effect on our funding from the Government. We used to operate entirely without government funding, and we think we should be able to stand on our own feet once again and stop chasing the carrot which Ottawa is dangling. (There is no guarantee that the Government will give us financial support even if our team doesn't go to Hobbs.)

If you agree with us, please act **now**: add your name to our list of supporters; fill in the coupon below and pop it in the mail. We need your support and your Directors need your guidance.

THE CANADIAN GLIDING TEAM

Al Schreiter Jim Carpenter Wilf Krueger Willem Langelan
Paul Sears Hal Werneburg Ulrich Werneburg

Oscar Estebay, 921 St. Aubin, St. Laurent, Quebec H4M 2K2
Yes, I agree that we should be able to make important decisions without having to consider the effect on our funding from the Government, and I would be proud to spend \$25 a year if necessary, to free the Soaring Association of Canada from the dependency of hand-outs from Ottawa.

SIGNATURE

NAME

ADDRESS

CLUB

WORLD RECORDS

COMING EVENTS

ORDER OF APPEARANCE Open - single place
Fem. - single place
Open - dual
Fem. - dual

STRAIGHT DISTANCE TO GOAL (km)

S.H.Georgeson (group of 3)	14.01.78	1254.26
B. L. Drake		
D.N. Speight		
New Zealand - Nimbus II		
T. Zaiganova, USSR A-15	29.07.66	731.60
I. Gorokhova/Z. Koslova, USSR Blanik	3.06.67	864.86
I. Gorskhova/Z. Koslova, USSR	3.06.67	864.86

DISTANCE AROUND A Δ COURSE (km)

Hans-Werner Grosse, W. Germany ASW-17	4.01.81	1306.85
Karla E. Karel, Great Britain LS-3	9.01.80	814.01
Grosse/H. Kohlmeier, W. Germany SB-10 (Alice Springs, Australia)	28.01.79	1112.62

not claimed

GAIN OF HEIGHT (m)

Paul F. Bikle, USA SGS 1-23E	25.02.61	12,894
Anne Burns, Great Britain Skylark 3	13.01.61	9,119
S. Jozefczak/J. Tarczon, Poland Bocian	5.11.66	11,680
A Dankowska/M Matelska, Poland Bocian	17.10.67	8,430

300 km Δ SPEED (km/h)

Hans-Werner Grosse, W. Germany ASW-17	24.12.80	158.67
Sue Martin, Australia Ventus (Waikerie, Australia)	8.02.81	129.52
E. Mueller/O. Schaeffner, W. Germany Janus	3.11.77	140.48
A. Orsi/F. Bellingeri, Italy Calif A-21	18.08.75	97.75

750 km Δ SPEED (km/h)

Hans-Werner Grosse, W. Germany ASW-17	6.01.82	144.00
Karla E. Karel, Great Britain LS-3	24.01.79	95.42
Grosse/Kohlmeier, W. Germany SB-10 (Alice Springs Australia)	14.01.80	131.84

not claimed

1250 km Δ SPEED (km/h)

Hans-Werner Grosse, W. Germany ASW-17 (Alice Springs, Australia)	9.12.80	133.24
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DISTANCE IN A STRAIGHT LINE (km)

1460.8	25.04.72	Hans-Werner Grosse, W. Germany ASW-12
949.7	20.01.80	K. E. Karel, Great Britain LS-3 (Tocumwal, Australia)
970.4	27.01.75	Ingo Renner/H. Geissler, Australia Caproni A-21
864.8	3.06.67	T. Pavlova/L. Filomechkina, USSR Blanik

O & R DISTANCE TO GOAL (km)

1634.7	9.05.77	K. H. Striedieck, USA ASW-17
1127.68	28.09.81	Doris F. Grove, USA Nimbus II (Piper Memorial A/P USA)
1000.88	28.09.81	Thomas Knauff/Rob Gannon, USA Astir Twin II (Ridge Soaring, USA)
617.43	14.05.80	P. Majewska/V. Malcher, Poland Halny

ABSOLUTE ALTITUDE (m)

14,102	25.02.61	Paul F. Bikle, USA SGS1-23E
12,637	14.02.79	Sabrina Jackintell, USA Astir CS
13,489	19.03.52	L. E. Edgar/H. E. Klieforth, USA Pratt-Read
10,809	5.03.75	Mary Nott/Hanna Duncan, USA SGS 2-32

100 KM Δ SPEED (km/h)

165.35	18.07.74	Kenneth B. Brieglieb, USA Kestrel 17
139.45	2.02.79	Sue Martin, Australia LS-3
158.30	10.12.81	Muller/Schaeffner, W. Germany Mü II (Bitterwasser, South Africa)
126.29	1.08.78	A. Dankowska/E. Grzelak, Poland Halny

500 KM Δ SPEED (km/h)

151.28	10.12.79	G.Eckle, West Germany ASW-17
133.14	29.01.79	Sue Martin, Australia LS-3
146.70	13.12.81	E. Mueller/K. Senne, W.Germany Mü II (Bitterwasser, South Africa)
93.7	4.05.80	A. Dankowska/S. Aiatek, Poland Halny

1000 KM Δ SPEED (km/h)

145.33	3.01.79	Hans-Werner Grosse, W.Germany ASW-17
		not claimed
129.54	21.12.80	Grosse/Kohlmeier, W. Germany SB-10 (Alice Springs, Australia)
		not claimed

Jan 12-Mar 30, Glider Pilot Ground School offered by North York Board of Education at Bathurst Heights Collegiate. Cost \$24. Course instructor Ivor David of York Soaring. For info and registration contact North York Board of Education.

Feb 4-6, 1983 International Ultralight Aircraft Exposition, Queen Elizabeth Exhibit Hall, Canadian National Exhibition Place, Toronto. Contact Rolland Boily (204) 944-7262.

Mar 4-6, 1983 SAC AGM . Calgary, Alberta. Host Cu Nim Gliding Club. Details will be mailed.

Mar 24-27, 1983 SSA National Convention, Reno, Nevada, MGM Grand Hotel. Host Pacific Soaring Council. Contact Nancy Davis, 3576 Altamont Way, Redwood City, Calif. 94062 (415) 364-3237.

May 20-23, 1983 Innisfail May Meet. Hosted by ESC. Sponsored by Alberta Soaring Council.

Jun 11 -18, 1983 **Eastern Basic Instructors School**. Host SOSA, Rockton, Ontario.

Jun 20-Jul 10, 1983 18th World Gliding Championships, Hobbs, New Mexico.

Jun 27-Jul 3, 1983 **National Soaring Week**. Watch for direct correspondence to clubs and other publicity material.

Jul 9-16, 1983, **Western Basic Instructors School**. Host Winnipeg Gliding Club.

Jul 12-21, 1983 **15M/Open Class Nationals**, Claresholm, Alberta. Host Alberta Soaring Council/Cu Nim.

Jul 19-28, 1983 **Std. Class Nationals**, Hawkesbury, Ontario. Host Montreal Soaring Council.

Jul 24-Aug 1, 1983 Cowley Summer Camp, Cowley airfield, Alberta. Host Alberta Soaring Council. Contact Ken Palmer, 23 Baker Cres. NW, Calgary, Alberta T2L 1R3 (403) 284-1396 H.

Oct 8-10, 1983 Cowley Wave Camp, Cowley airfield, Alberta. Host Alberta Soaring Council.

"GLIDING INTERNATIONAL"

It's all in the first international gliding magazine, which brings you bimonthly the most interesting articles and the latest news especially selected by leading international pilots. The editor is Eddy Huybreckx. It is printed in English, with translations by Max Bishop, the well-known interpreter at recent world competitions.

Correspondents and contributors are experts in their particular fields, whether contest organization methods, technical, meteorology, etc. The editor will pay well for accepted publications.

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FAI BADGES

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Toronto, Ont. M5M 2A7 (416) 481-0010

The following badges and badge legs were recorded in the Canadian Soaring Register during the period October 1, 1982 to November 30.

DIAMOND BADGES

47 Brian J. Milner	Kawartha	World # Pending
48 John H. Proudfoot	SOSA	World # Pending

GOLD BADGES

193 Denis Gauvin	Quebec
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SILVER BADGES

639 Eric W. Meikle	Toronto
640 Charles N. Fowler	Cu Nim
641 Marc Rebs	York
642 Alex Szabo	SOSA
643 Robert L. Mayhew	Vancouver

DIAMOND DISTANCE

Brian J. Milner	Kawartha	501.3 km	Jantar Std.	Ridge Soaring, PA
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DIAMOND ALTITUDE

Robert Di Pietro	Champlain	6218 m	Jantar Std.	North Conway, NH
Ursula Wiese-Burton	Cu Nim	5722 m	Ka6CR	Cowley, Alberta
George W. Couser	Ariadne	5456 m	Pik-20	North Conway, NH
Colin Tootill	SOSA	6065 m	Pik-20D	North Conway, NH
Jean Bellavance	Quebec	5300 m	Kestrel	Baie St. Paul, Que.
John H. Proudfoot	SOSA	5517 m	ASW-20	North Conway, NH
Kate Estebany	Montreal	5014 m	Twin Astir	North Conway, NH
Margaret E. Sears	Montreal	5852 m	Std. Libelle	North Conway, NH

GOLD ALTITUDE

Denis Gauvin	Quebec	3460 m	Pilatus B-4	Baie St. Paul, Que.
Kate Estebany	Montreal	see Diamond Altitude		
Margaret E. Sears	Montreal	see Diamond Altitude		

SILVER DISTANCE

Robert P. Wehrley	SOSA	79.0 km	1-26	Rockton, Ont.
Charles N. Fowler	Cu Nim	82.0 km	1-26	Cowley, Alberta
Marc Rebs	York	85.5 km	1-26	Arthur, Ont.
Paul Yardy	COSA	80.0 km	RS-15	COSA Airport, Ont.
Alex Szabo	SOSA	63.0 km	1-26	Rockton, Ont.
Norman Lake	Grande Prairie	80.2 km	1-23	Cowley, Alta.
Robert L. Mayhew	Vancouver	55.5 km	Lark 29D2	Claresholm, Alta.

SILVER DURATION

Michel Rochette	Champlain	5:17	1:26	St. Antoine, Que.
Robert Labrosse	Champlain	5:15	Duster	St. Antoine, Que.
Cass Bieniak	York	5:07	1-23	Arthur, Ont.
Kenneth Ferguson	Toronto	5:10	Ka6CR	Conn, Ont.
Peter D. Chatterton	Independent	5:10	1-26	Ridge Soaring, PA
Robert L. Mayhew	Vancouver	5:14	Lark 29D2	Hope, BC

SILVER ALTITUDE

Robert P. Wehrley	SOSA	1150 m	1-26	Rockton, Ont.
Keith R. Bradley	Winnipeg	1280 m	2-33	Pigeon Lake, Man.
Heinz J. Schwarz	Grande Prairie	1585 m	1-23 A	Johnson's Airport, AB
Robert Labrosse	Champlain	1311 m	Duster	St. Antoine, Que.
Norman Lake	Grande Prairie	1524 m	1-23	Cowley, Alta.
Robert L. Mayhew	Vancouver	2652 m	Lark 29D2	Hope, BC

C BADGES

G. Bryan Macdonnell	Okanagan	5:28	Mü-13D	Cowley, Alta.
Mike Speckert	Kawartha	1:02	Blanik	Omeme, Ont.
David J. Beamish	York	1:02	1-26	Arthur, Ont.
Gary C. Weir	York	1:10	2-33	Arthur, Ont.
Robert P. Wehrley	SOSA	3:00	1-26	Rockton, Ont.
Derrick Flannigan	B. Borden	1:29	2-33	Base Borden, Ont.
David R. Duchesne	Bluenose	1:03	K8	Stanley, NS
Chris E. Waltham	Vancouver	1:25	Blanik	Hope, BC
Bill Harisch	Cu Nim	1:09	1-26	Black Diamond, Alta.
Jean-Pierre Briere	Champlain	1:12	2-22	St. Antoine, Que.
Renald E. Lien	Regina	1:01	1-26	Odessa, Sask.
Norman Lake	Grande Prairie	4:08	1-23	Cowley, Alberta
Linda Mikalauskas	Kawartha	1:14	1-26	Omeme, Ont.
Laurie Pearson	Montreal	1:06	1-26	Hawkesbury, Ont.
Wolfgang Kaffer	York	1:52	1-26	Arthur, Ont.
Dietmar Baltés	York	1:02	1-26	Arthur, Ont.
Jeremy Anthony	Winnipeg	1:57	1-26	Pigeon Lake, Man.
Guy C. Hollington	Vancouver	1:13	Blanik	Hope, BC
Robert L. Mayhew	Vancouver	5:14	Lark 29D2	Hope, BC

FAI RECORDS

Russ Flint

Feminine	Absolute altitude (Territorial)	8035 m
	Gain of height (Territorial)	5720 m

URSULA WIESE (Burton), Ka6CR, Cowley, Alberta 23 Oct 1982

Supersedes Absolute altitude of 3940 m by Antonia Williams flown in 1973.

This flight is the first Diamond flight by a female pilot in Canada.

CLAIM PENDING APPROVAL

Speed 300 km Goal and Return (Citizen)

BRIAN MILNER, Coburg, Ontario, Jantar Std. 2, flown in Pennsylvania – 139.5 km/h, 13 Nov 1982

NATIONALS NOTICE

The 15m/Open class Nationals dates have been changed from the previous advertised ones to conform to National Contest rules requiring contests to start on a Tuesday and end on a Thursday, and to fit between the World contest at Hobbs and the Cowley Summer camp. The new dates are 12 - 21 July.

Contest organization is underway now by Cu Nim, and the first information packages will be mailed to potential competitors and clubs in January.

Campbell

Printer ad,
Ottawa