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free flight • vol libre

POTPOURRI

Gordon Bruce

The October directors' meeting was held in Dartmouth and hosted by the Bluenose Soaring Club. The Bluenose club is an ideal one to illustrate a small club building a very successful organization. Their membership at present is 33. They are winch users on a 5000 foot runway using 4800 feet of wire — normal release height when a wind is blowing is about 1800 feet and the record is 2800 in a K8. Price per tow varies but is about $5.00. They own two K8s and two K7s and there are six private ships. Their two self-constructed hangars measure 90 x 30 and 110 x 30 feet, open back and front with gliders pushed in tail first, staggered from both sides. Standard truss roof, galvanized covering. They have a small clubhouse and much spirit. We had an instructive visit to the club and in the evening enjoyed their hospitality at a gathering of 90% of their members and spouses. They used this opportunity to present various awards and sample an infinite variety of beautifully prepared food. It's a stimulating experience to be amongst so much enthusiasm and kindness.

*The minutes of the meeting are summarized in this **free flight**. Of particular interest was the opportunity to review an estimated budget for 1988. We will not be receiving any government grants and during the past year, expenses have been critically examined to reduce them wherever reasonable. Significant cuts have been made in printing costs both for publications and **free flight** by negotiating new printing contracts. In addition, postage and courier expenses have been cut by 30% and stationery costs cut back by finding better sources and lower prices. Our office rent will be reduced by approximately 40% by moving into smaller quarters when our present lease expires next August. Ottawa now has surplus office space which allows better prices. It appears that we will be able to meet our present method of operation without major increases in fees in 1988.*

The accident rate has been high this year — so far, the claims will amount to approximately $260,000. This is a serious problem and will make negotiating next year for insurance coverage most difficult and more expensive. A more serious problem is how to get the accident rate down. The obvious answer is staring us in the face. Our rather casual attitude to flying discipline and good airmanship must be set aside to be replaced with a determination for all to maintain a high standard with clubs rigorously monitoring any laxness or bending the rules of common sense and recognized procedures. A corollary of this is our cavalier attitude to statistics and accident/incident reports — last year's AGM report on flight statistics was without 50% of the clubs reporting. Here we are charged by Transport Canada to carry out flying training of our members, run safety programs and report flying statistics, etc., and only 50% bother to respond to a well-recognized requirement. Is it reasonable to assume that those clubs who don't comply have a flying operation just as sloppy? The same general attitude prevails towards accident/incident reports being completed and sent into our Flight Training and Safety committee.

For a start, over the winter, review your flying training program and airfield discipline and determine your weak points or those that need improving and insist that they be rectified. It is only by recognizing that we have a serious problem that clubs can find the determination to raise our standard of airmanship and lower our accident rate. Do we not need to shake ourselves out of our complacent attitude and vigorously tackle this problem?

The good news: It was a great pleasure to sign two Record Certificates for flights by Peter Masak. One for a 1000 km Triangle Speed at 106.5 km/h and the other for Distance around a Triangle of 1007 km. By the way, Peter came seventh in the US 15 m Nationals, a significant achievement. It was an equal pleasure to sign a Record Certificate for John Firth for a 400 km Triangle Speed flight to add to his continuing assaults on various records. These quests for better performance must.be the type of competition which contributes the most to improve and perfect soaring techniques.

Transport Canada has signed a Technical Agreement with its opposite organization in Germany which provides acceptance of each other's Type Approval of new aircraft. This should immeasurably cut down the paper work and testing now required to Type Approve a German glider imported into Canada. On the training and licence standards side, Transport Canada will shortly issue amendments to the Glider Pilot Licence which are partially the result of continuing liaison by SAC since the Dubin Commission: The medical now required from a Transport Canada approved examiner will be eliminated and an applicant will sign a Civil Aviation medical declaration as is done for an ultralight pilot. If the applicant is unsure of his medical well-being, he will require a regular air medical to confirm his status. An instructor rating will also require an examination by an approved medical doctor. Self-launched motorgliders will be considered as gliders and an endorsement on the Glider Pilot Licence based on method of launch will be used to authorize flying a particular motorglider. The latter certification will include obtaining not less than 60% in the Private Pilot Licence written examination (PPAER). Be patient, progress is a slow business, but worth the necessary time. Just think, at long last, the medical for glider flying is out. A final thought is that Transport Canada is full of very competent people with a job to do. Generally speaking, they do it well — just like us.

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

DEPARTMENTS

ISSN 0827 – 2557

Cover

Wave needs wind, and here it is! This photo by Doug Currie from the 1950s was taken at Cook's airstrip near Pincher Creek, Alberta — the time and site of the original explorations of wave flight in Canada. The photo is from "Stalking the Mountain Wave", a book on the meteorology and history of wave soaring in southern Alberta which is in the final stages of production.

AERO CLUB OF CANADA FINALLY OFFICIAL

Bob Carlson

It has finally happened. After a six month wait and lots of frustration, the supplementary letters patent transforming the Royal Canadian Flying Clubs Association into the AERO CLUB OF/DU CANADA (ACC) have arrived. Hurrah! The board of the ACC held a meeting on 1 November 1987. Mostly, we listened to reports on the activities of our representatives to the FAI, the Olympic Committee, and the individual sports. We also welcomed two of your colleagues to the board. Ed Hollestelle is now the SAC representative, and Colin Tootill is the ACC secretary.

The other activity that took our time was discussing how we can develop spirit and recognition for the ACC. One thing we will do is try to hold as many AGMs as we can at one time in one city. The idea is to have parallel simultaneous meetings for each of the disciplines, and a big joint banquet. Ultimately, we would hope to have product displays and multi-discipline seminars or lectures. Since the SAC AGM is in Ottawa this year, so will the ACC AGM and maybe Hang Gliding and others.

Another thought was joint use of facilities by similar disciplines. For example, hang gliders now use aero and auto tows to get to their starting altitude. They don't always use tall buildings or cliffs. So why not "AEROMINGLE". Some gliding clubs allow model flying on flat days or after regular flying has stopped. Are there other ways or accommodations? Can there be adjacent jump zones to a common airport? Can the experimental aircraft folks work out of joint fields? They certainly do at Brampton. It is almost an article of faith that gliders and power aircraft do not work well out of the same field. Must this always be so? Are there ways of accommodation? The pressures on conveniently located airports (Toronto has lost two this year— Maple and King City) are increasing. I give Rockton ten years or less before a major suburb of Cambridge is built close enough to cause problems. We will need new ideas and some courage to accommodate to the future. I and my board think that the ACC can lead us all to some of the answers.

Want to know who sits on the Aero Club board? Here they are:

President	**Bob Carlson,** SAC
Vice President	**Jack Humphrys,** Model Aeronautics Association of Canada (MAAC)
Secretary	**Colin Tootill,** SAC
Members	**Bob Purves,** Canadian Sport Aeroplane Association, and FAI Vice President for Canada
	Bob Clipsham, CSAA delegate. ACC delegate to Canadian Aerospace Institute and Canadian Olympic Committee
	Patricia Cruchley, Aerobatics Canada delegate
	Fritz Gnass, Canadian Association of Rocketry delegate
	Carry Lockyer, Canadian Balloon Association delegate
	Michael O'Hara, Canadian Sport Parachuting Association delegate
	Douglas Moisuk, MAAC delegate
	Edward Hollestelle, SAC delegate
	André Dumas, CSAA, Past President and Honorary President of the FAI, active with the Air Cadets, and MoT Regional Administrator, Quebec and the Maritimes.

We have also had Don Fisher, Past President of the RCFCA and alternate delegate to the FAI congress participating in our meetings. So has Jack Greenlaw, President of the Experimental Aircraft Association of Canada. Unfortunately, it appears that the Ultra-light Pilots Association has so little activity, that they feel there is little advantage in belonging.

Our major goal for the balance of 1987 and most of 1988 is to get the Ottawa office operating to serve the ACC societies effectively. We also have the World Championship in Powered Aerobatics in Red Deer, Alberta next summer — visit if you can and help if you are asked or if volunteers are needed. In 1989 we are likely to have a World Ballooning Championship in St. Jean-sur-Richelieu. I hope to see an FAI events calendar in **free flight** as soon as we can get one organized so that we can all get to know one another better and take advantage of the skills and ideas of others of similar interest. We certainly hope to continue the close relationship that was established by the RCFCA with Transport Canada over 40 years of flying activity.

Last but not least we have to figure how to keep the FAI fee reasonable in view of the increase in the value of the Swiss Franc (it has virtually doubled in the past year) and the loss of about 10,000 fee-paying power pilots now associated with the Air Transport Association of Canada (ATAC). I hope you all have or will be having a MERRY CHRISTMAS AND NEW YEAR. Let's make 1988 the safest and best year we have all had. □

The SOARING ASSOCIATION OF CANADA

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

free flight is the 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, reports, club activities, and photos of soaring interest. Prints (B&W) are preferred, colour prints and slides are acceptable. Negatives can be used if accompanied by a print.

free flight also serves as a forum for opinion on soaring matters and will publish letters-to-the-editor as space permits. Publication of ideas and opinion in **free flight** does not imply endorsement by SAC. Correspondents who wish formal action on their concerns should contact their SAC Zone Director. Directors' names and addresses are given elsewhere in the magazine.

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.

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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'Aéro Club du Canada (ACC) représentant le Canada au sein de la Fédération Aéronautique Internationale (FAI, administration formée des aéro clubs nationaux responsables des sports aériens à l'échelle mondiale). Selon les normes de la FAI, l'ACC a délégué à l'Association Canadienne de Vol à Voile la supervision des activités de vol à voile telles que tentatives de records, sanctions des compétitions, délivrance des brevets de la FAI, etc. ainsi que la sélection d'une équipe nationale pour les championnats mondiaux biennaux de vol à voile.

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 sont utilisables si accompagnés d'épreuves.

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 adressé au directeur régional dont le nom apparait dans cette revue.

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 ($18.00 par an/$24.00 à l'extérieur) veuillez contacter le bureau national.

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OPINIONS

PAST, PRESENT, AND FUTURE

Congratulations on the high quality of **free flight**. I've enjoyed reading your article on the "Bummer" camp, and spent some time studying Ursula's history of Canadian records. At one time, the founder of CVVA (the Champlain club in Sherbrooke) had hoped that Jack Ames would come out of retirement to instruct the newly-founded club. He didn't, and the next year (1969) the founder Wolf Seufert won the Instructor-of-the-Year award! SOARING is an outstanding magazine, but errors in spelling have crept into the articles that are giving a sloppy and second rate impression. Beside the accuracy of the writing, there is a satisfying Canadian flavour to **free flight,** more emphasis on the fun of flying that reflects the more relaxed attitude we have towards our sport, as opposed to macho feats of amazing stamina and financial sacrifice.

As you know, Mississquoi Soaring Association has sunk out of sight, although it continues to exist on paper. The equipment has been sold, bills paid, and the misery all but forgotten. Last week, CVVA flew from the Mansonville strip in search of wave. CVVA has enjoyed a good year by its standards, and intends to keep flying until snow drifts bury the airfield. I've flown GUMY, my Pioneer, more than ever even though attempts at 300 km were foiled by headwinds. A DDD seems to be the only answer, given our location and GUMY's and my modest abilities.

Seeing the length of my flying years shortening I've decided to investigate other gliders with good performance. Having no accurate reports on the flying qualities of used gliders, I am wondering if you, or someone else, could prepare some material on their handling quality and maintenance problems for buyers like myself. For example, is an HP-11 a satisfying machine for a weekend pilot? What would a fair price be? Should one buy a Libelle or Cirrus instead? Why? Is a 1-35 a better machine for the average pilot than a glass bird because it's metal? There ought to be many readers interested in this topic.

Very best regards to you and Ursula,

Kemp Ward
Mississquoi

WE NEED A "CONSUMERS" REPORT FOR SAILPLANE BUYERS

As a relatively new member of the soaring fraternity, one who is completely hooked on the challenge and serenity of the sport, I would like to have my own glider so as not to have to wait my turn to fly the club 1-26. And because I don't want to be buying and fixing and selling and buying and fixing gliders, it is my intent to try to get one that has as good performance characteristics as I can safely fly.

free flight has been read, but nowhere do I see any articles about selecting a glider. Is there an up-to-date reference book that describes the performance characteristics of the kinds of gliders that are for sale from time to time?

How safe are they, how sturdy, how are they on take-off or landing, do they have flaps or brakes or spoilers, how large are the cockpits?

At our small club, there are four or five people who have flown glass gliders. One will say that the cockpit of a Libelle is too small for me (6' – 210 lbs). A low priced Open Cirrus is out because a 17 metre wing is too long for safety on take-off. A Jantar Std 2 is too advanced for a low-time pilot.

So how do I rate those gliders that are for sale as to their suitability for me? Is there something like a "Consumers Report" on gliders? After that comes the matter of determining the condition of the glider. I don't see any ads concerning engineers who can examine and appraise a glider. Is there a reliable person in western or eastern Canada who does this? What has to be done to buy a glider from the USA and import it?

Obviously, there are lots of questions to be considered and it was suggested that you, as Editor of **free flight**, might be able to suggest some reading material that would help reduce the lottery aspect of purchasing a suitable used glider. I would appreciate any reference or help you can provide.

Ray Richards
3823 Bow Bay
Regina, SK S4S 7E1

Does anyone out there think they can write an article surveying the used market for Kemp and other average pilots?

MORE ON APPROACH SPEEDS

I was pleased to see in the 4/87 issue of **free flight** that Mr. James Koehler of the Saskatoon Soaring Club has attempted to quantify the so-called "penetration approach". In his article, he reviewed his analysis of this approach technique, concluding that the optimum approach speed under the conditions analyzed was something less than a "dive and zoom" approach.

Before proceeding, I would like to first comment on Mr. Koehler's suggested Air Cadet instructing program. Being Air

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A FEEBLE ATTEMPT AT BEST

So my first XC wasn't record setting. So what?

Derek Ryder
Cu Nim

I never claimed I was the best pilot that ever lived. I come to the club, go flying, have fun, land, and that's about it. So I show up at Cu Nim on one sunny Saturday and find everyone and their brother declaring 500 plus km tasks. "Ha ha, not for me," I chortle. Then Don Rowe wanders up. "It's a beautiful day! Hey, you can do it. Pick a small and easy task, and go for it."

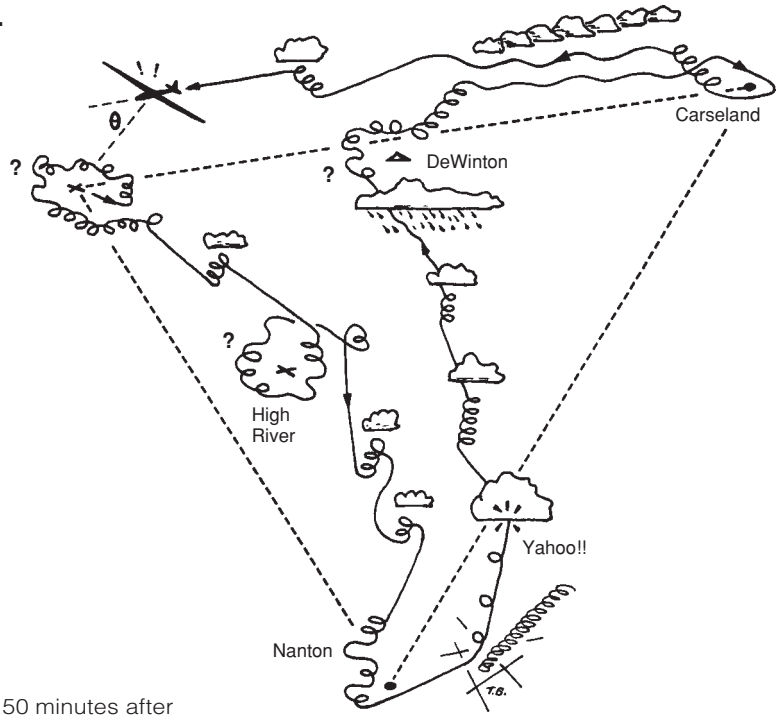
I should have known better than to take his advice. I'd owned my baby (more specifically, a Dart 17R, C-FOAK) for about a year and a half. Despite the fact that I was celebrating a full eight years as a glider pilot, I'd amassed a somewhat less than awesome 193 flights, and only 70 solo hours. Hey, but I'd been around ....

Out came the maps. The Cu Nim – Nanton – Carseland triangle seemed a good choice. About 168 km, paralleling major roads the whole way. Navigation would be a snap, so would the inevitable retrieve. As sure as a junior George Moffat, I calculated my speed at a hopeful 50 km/h, saying I'd need around three hours in the air. Take-off no later than two and I'd be laughing. Boy, and I just got a new final glide calculator, which I'd affectionately nicknamed Pricilla. I might even do this ...

Strapped in and on the line. Rowe's in the air, well on his way to his declared 500. Bennett's going for new world records at 750 km, after a release from 1300 feet. The towpilot (mercifully unknown) calls out on the radio, "a boomer at 1200 feet — be ready to pull off!", as we trundle down the runway at 1:35 pm — a great start time.

And at 1250 feet, the towplane leaps upwards. Bracing myself, in a quick six second, so do I. PWANNNG, and I'm off.

Now those of you who know me know that I don't release early. But I was in a hurry, and I was on task, and I was flying cross-country, and a hundred other excuses that make us do stupid things that our training tells us not to. And sure as God made Eve, I spent the next 40 minutes struggling to get above 1500 feet, almost directly over the field. I saw other ships dropped into the same lift I was climbing out. Two pilots even passed me on the way up. An inauspicious start, and a valuable lesson learned: IT'S JUST ANOTHER FLIGHT — calm down, and stop flying like an idiot.



So finally, 50 minutes after take-off, 10,500 and about a 1000 feet below cloudbase the lift peters out and I'm on my way, vowing not to get low again. The checkpoints start passing by — Big Rock at nine, Okotoks at eight (oops, better stop for lift), up to ten this time. High River, here I come.

Gee, there's not much lift between Okotoks and High River. Lots of clouds, but I'm only at seven, and the bases are a good 5000 feet above me. I notice there's lots of activity at the High River strip, and here I sail by at 6500. Nanton, here I come. 6000 feet. Hey, who took the lift? 5500 feet — now wait a second. This is low, and the last lift I was in was about 15 miles ago. What did Tony mention at last year's X-C clinic about inter-thermal distance?

Left turn. Right turn. Still at 5.5 — kinda calm. No dark fields, no tractors plowing, no dust devils, no grass on fire. What did he say about lift sources? Still at 5.5 High River airport's not too far away. Gingerly I head back, figuring an airport's better than a field to land in. Now, how does one land at a busy uncontrolled strip? STILL 5.5. This is getting silly. Dead over the airport at 5.5. A bubble — crank her in. Five, then 10, then 20 minutes, STILL at 5.5! All the while on 122.8, the chatter's on about that "$#^*&! !@!" glider at 5.5. Get off my case, guys.

Hey — I'm at 5.6, then 5.7 — 5.8 — 6 — 6.5. Yahoo! Oops — 6 — 5.5 again. Back to 6. Struggle. Centre — concentrate — 6. Good, 6500. Work, stupid, you wanted to fly X-C, and it's work. At long last seven. Then eight. Then 8.5 — 8.7 — 8.8, and that's it. Beautiful clouds at 12, and lift craps out at 8.8.

Decision point #28 — try on for Nanton, through the garbage I already tried or scurry home like a chicken? Maybe direct to Nanton by heading south is not the ticket. East I go to the flat prairie, because "you never fly through the same bad air twice". And besides, I was too far away to straight glide home.

Well, I'll spare the gory details. I thought I'd never make Nanton, as I scratched and scraped my way the seemingly insignificant ten miles. I never could climb above 7.2, and I took every piece of lift I could. It took me a half hour to do the 30 km to High River, and another half an hour to make Nanton. When I finally went in for a "picture" (I had my camera, but had no intention of developing the seven year old film) I'd basically given up on making this task, but I'd be damned if I'd give up now. I picked a great looking field right on Highway 2 just north of Nanton to land in after my trip over the town. In I dived, up for the picture, out of town at 5800 feet — lots of height for my circuit — when I saw it.

"It" was a dust devil just east of the town. I could make a leap over there, then land easily in my beautiful field if I found nothing. So in I went. Suddenly all hell broke loose, as this monster thermal tore free from the prairie. Both varies pegged, bouncing around in the cockpit, I hung on for dear life, and at 1200 ft/min, was at 11,300 feet in 5 minutes. A cloud formed around me, and it got really cold, as my sweat from the last two hours formed a mini-cloud in the cockpit. I couldn't see a thing. Pulling the spoilers, I stuck the

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310 km in FRANCE

Boris Mospan
Champlain

How does a one year licencee rookie who has just passed his cross-country rating with only a total of 27 hours of flight achieve this feat? Easy!

First, you must know a flying instructor in Fayence, in the southeast of France, second the weather must cooperate, and third you must go there!

I arrived in France this August 13, picked up a leased car and took the long way to the Côte d'Azur to get there for next Thursday afternoon. Driving through Reims, I spotted one of the two soaring clubs in that city. Later in the Alsace region, I spotted gliders here and there. Passing through Switzerland I learned about the "Centre Romans de Vol à Voile" at their own airfield at Montricher. It was a Monday when I went to see it, and everything was packed away in the hangars.

Finally I arrived at Fayence's club, AAPCA, which stands for "Association Aéronautique Provence Côte d'Azur" altitude, 230 metres. It has a very large squarelike field, almost perfectly flat. The hangar doors are opened up around 08:30 hours, and a briefing takes place daily at 09:00 in the main building meeting/training room. The day was a clear and hot one, and the same was forecast for the next day. Serge Morin is a full-time instructor here. He was previously with our Champlain club here in Quebec. After having contacted Serge on the radio, we exchanged greetings and I then waited for him to land.

Friday, August 21, 1987, 09:00 hours. The Janus B, 'PK', was assigned to Serge and I. The weather was as follows: winds SSW at ten knots, 0°C at 4500 m, and the coverage CU 2/8 to 4/8 and ACU 2/8 to 5/8.

The flight lasted four hours and 45 minutes, yielding an average speed of 64 km/h (the European record for 300 km is 131 km/h).

Here is how it happened! Serge's job on days like today was to fly cross-country with some students; so with a radio and some visual contact, he was to supervise three students and keep tabs on two other pilots for soaring conditions.

09:00 I was present in the meeting room with about 40 pilots, most of them visiting pilots over the age of forty. The room held at least four maps, photographs of outlanding fields, and other aids for instruction theory. Pilots were filling their "panneau", planning their turning points for their flights. The panneau was also used to officiate the distances achieved.

09:30 Serge and I prepared the glider and then went for breakfast to the canteen on base.

12:00 I was sitting in the cockpit of a Janus with my chute on! I readjusted the altimeter to 230 m and familiarized myself with the oxygen equipment. Note: we did not sign out a barograph because these are used mainly by students that solo. I filled out a card for daily membership and an insurance card provided to us by the French Federation of Soaring.

12:30 Hooked up and rolling, a thrill of a lifetime was about to begin! The tow lasted seven minutes and we were released at 600 m. The first thermals in the valley yielded lift of 2 to 2.2 m/s, later the thermals and ridges yielded over 3 m/s consistently. Our lowest altitude in the Alps was 1700 m. The first ridge had a microwave station on it where there were lots of people standing around ... watching us? This ridge was a stepping stone to some serious soaring. The somewhat severe roller coaster ride was beginning to take its toll, and without warning queasiness was getting the better of me. I realized that if I was going to continue I would just have to get used to it.

14:15 After several camera shots and two big valleys flown over, flying 50 km plus at an altitude of 2600m, (and me with a full white paper bag) Serge asked if wanted to return. Need I tell you what my answer was? (It was No!)

Later we crossed the divide between the northern and southern Alps, and at 3400 m I started on the oxygen. Feeling better, I told Serge, "Let's go for the 300 kilometres."

11,000 feet at Glacier Blanc

15:20 I took a picture of our turning point, Monêtier, a city I had driven through several days ago. It was here I realized how difficult this simple yet necessary task in cross-country could be, with the camera fixed to the canopy. The scene cannot be captured in pictures, let alone by words ... it was simply breath-taking to say the least. In the distance towards the east you can see Italy and towards the north the famous Mont Blanc.

Even though the sun heated the cockpit, at over 3000 m, it was getting rather chilly and the vents had to be closed. Conditions were favourable so we made a 30 km detour on our return to see some ice-fields, real close. It was in this area that we achieved our highest altitude of 3700m, and I took a picture of Glacier Blanc.

On the way back, we saw sailplanes with markings from Switzerland, Holland, and many from Germany. These came from other bases located in the Alps like St. Auban (which, by the way, is not located in St. Auban, a town not too far from Fayence).

Flying through an area common for many cross-country routes, I saw even more gliders than before. You had to be especially attentive to traffic in these world class "highways of the sky". At this very place in the opposite direction only about 300 m above us, I saw a formation of four gliders, seemingly the same, formed in a diamond. I was sorry I had no film left in my camera because soon after, I saw another rare sight, two hang gliders at 2600 m!

By now I was physically drained, and even the oxygen didn't help much. After two more bouts of air sickness, we headed straight back to base cruising at 200 km/h. (Note: A Janus is heavy, therefore, water ballast is not used.) We flew a wide circle around the field and landed in front of the hangar.

This was a flight to remember! It was the fastest, highest, longest, and farthest I've ever soared, and it was the most expensive sailplane I've been in so far. I could probably beat the time in my own at Champlain, but the rest is not so easy because experience is what really counts and it must be gained. Take Marianne, for example, one of the students being supervised by Serge during this flight. She has done her 300 km 'en plaine' and is enjoying her fifth year in soaring at the age of 21. Her third solo 'en montagne' yielded 200 km, the first two 100 km each. She also became a towpilot this year.

Experience is important because flying the Alps is dangerous, due to the traffic, weather, physical drain, and especially the type of terrain. You must be conditioned to this kind of soaring and be physically fit.

Flying the Janus is no easy task either! This sailplane is quiet and heavy and is not known to be a good climber. Serge says that a good 30 hours are necessary before one can really fly it. I tried on several occasions and there was no way I could keep the string straight for more than half a turn. In level flying it was manageable, but you always had to be gentle at the controls, something I wasn't from lack of experience flying high performance machines. This sailplane is probably the most flown Janus B in the world. Here are some of the specs: Wing span approximately 18 m, Vne 220 km/h, glide ratio 45, fixed landing gear.

For Spring '88, Serge is thinking of organizing an excursion to Fayence for experienced pilots. Any pilots interested can write to Serge at Champlain expressing their interest. In the meantime, save your Francs, and then have a good time in France! □

AN UNUSUAL TYPE OF WAVE

Tony Crowden
from SAILPLANE & GLIDING

This article is definitely not for the likes of those pundits who regularly experience "off-the-clock" lift, but for us lesser mortals the following account may be of some interest:

It was early last September and we had been having a pretty duff week at Talgarth with a high pressure area situated over the country. No matter how many sacrificial pints I drank each night to placate the BBC weather gods, the general situation remained horribly "settled", although the high was showing signs of being pushed away by a low pressure region centred over northern France.

All week, Derek Eckley (club chairman, site owner, and local pundit) was saying it would be okay on Friday, but we didn't believe him, thinking it was an attempt on his part to bolster our flagging enthusiasm as the week progressed. On Thursday night, we sank the usual amount of Welsh beer not believing that the weather would improve the next day. However, we had not reckoned with local knowledge — Friday morning arrived and the weather conditions had indeed changed. There was low cloud over the site with a moderate NE wind blowing off the Black Mountains and an obvious stationary wave slot right over Talgarth. Ignoring the now customary hangover, I rigged in record time and was given the first launch of the day at 1000 hours.

I was a little suspicious of being thrown into the air first, but to quote a hackneyed phrase, "Nothing ventured, nothing gained". I was launched into a wind of only 2-3 kts from the west at ground level which indicated that something interesting was happening aloft.

Releasing above cloudbase at 1500 feet agl, I received an extremely swift hangover cure. Just above the murk at cloudbase, the wave slot had formed with a solid looking vertical downwind cloud face which looked very promising. As I tucked my Mosquito in against the face, the point of the mechanical vario was hard against the stop, so I switched to the x2 scale on the electrical vario to find I had a genuine 18 kt of smooth lift! To give you an idea of the lift strength, by the time the tug pilot had landed and given me a radio call, I was already passing 5500 feet agl. However, the exceptional lift didn't last long and by 7000 feet there was a solid inversion with zero sink.

Upon exploring the area, the following facts became apparent. Beyond the single wave slot over the Cwmdu Valley, the rest of the area was unbroken 8/8 cu with no sign of any wave activity. The wave amplitude was very narrow as a moderately banked 180° turn at the end of a beat would result in flying through sink before being able to re-establish in the optimum position on the next beat. The tops of the cu immediately downwind of the wave slot were well above the general cloud layer and showing typical signs of wave action with smooth lenticular caps, but the most significant phenomenon was the occasional plume of cloud which formed at the top of these cu and spread back across the wave slot against the prevailing wind direction.

Two hours into the flight, the complete system suddenly collapsed, then slowly reformed into conventional wave system with a maximum of 4–6 kt lift in the primary wave and evidence of secondary and tertiary slots forming downwind. Gradually, this also collapsed and after an interesting five-hour flight I landed back at Talgarth.

Analyzing the events of the flight, the only way I can account for the strength of the initial lift is that the wave system was blocked from moving downwind by the unstable airmass, combined with the high humidity, causing a wall of cumulus to form on the lee side of the wave slot. This resulted in the airflow rising vertically until it reached the inversion layer. At this point, it couldn't rise any higher thus causing some of the airflow to curl back on itself which in turn served to reinforce the initial wave action (see Fig. 1). What else could account for such exceptional lift in an airstream of approximately 25 kt?

The reason for this article is to inquire whether any other pilots have experienced this type of "self-reinforcing" wave system and to invite comment. Plenty of gliding/Met textbooks deal with various types of wave and rotor systems, etc. but none I've read mentions this type of wave action.

Tom Bradbury, a meteorologist and glider pilot, comments:

This is an excellent example of the type of wave flow which can develop just to lee of a steep ridge when the wind profile shows a decrease in speed with height at some level just above the ridge line. It is not a very rare event, but does not seem to be described in textbooks.

I have flown in very similar conditions when there was a moderate northwesterly wind blowing across the Ochils. In the region near Dollar, where the lee slopes are both high and steep, the wave was marked by a strange looking cloud with a near vertical windward face and an arching overhang extending, apparently into wind, from the top of the cloud.

The cloud persisted near Dollar for several hours, but never extended far towards Portmoak because the slopes of the Ochils are lower and shallower at the end. Lift was very strong close to the face of the cloud and continued, much weaker, above the cloud top. Here one could climb while circling as if in a thermal; clearly there was practically no horizontal movement of air in that region.

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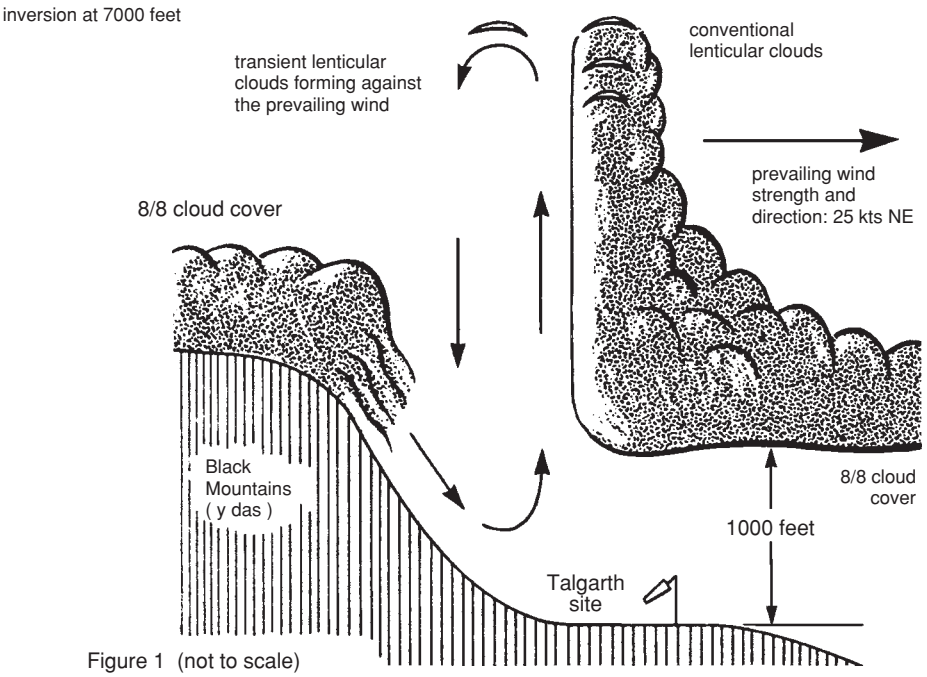

Figure 1 (not to scale)

A FEEBLE ATTEMPT

continued from page 4

nose down a bit and popped out of the side of the cloud about 300 feet above its base.

This stuff was fun after all.

Bye bye Nanton, I'm heading north. Dolphining for the next 35 minutes, thermalling below 9000 feet in the 400 to 800 ft/ min thermals that were under every cloud. All the time I was kicking myself for getting low, vowing again to never again get low. Then it started to rain.

You lose perspective of the types of the clouds ahead when you're near the bases. I s'pose that had I been watching the shadows, I would have seen the big mother cross my path, but it took the rain to wake me up. Probably during the time I had been happy and cruising northbound, the baby thunderstorm cut its five-mile wide swath of rain straight through the path. By the time I realized it was there, it was too late to divert in front of the slow moving beast. I'd broken my rule by being around 8500 feet without lift nearby. If I wanted to do this task, I had to cross five miles of blue, probably full of sink. Whipping out Pricilla, I did a quickie guess that it would cost me about 1100 feet to cross, which would leave me marginal for finding the lift that should be on the other side. But what the heck, go for it.

And at 5500 feet scratching in zero sink for 20 minutes over the quiet DeWinton airport, I had a bad case of déjà vu. Every rule broken yet again, but now I was getting used to it. So I did a Nanton all over again. Up to seven, back to six. Up to 7.5, back to 5.5. and 30 minutes later, I finally managed to squeak through what I now figured to be a weak inversion layer at 8000 feet. The lift got better, and I was back at nine, then ten, then cloudbase at 11.

I headed east, finally on my way to Carseland. There was a lovely cloudstreet heading right along my route, so I dolphined for a few minutes in beautiful lift 'til I got near the town. The town was two miles off the street, so feeling fearless, I peeled out. Straight into 1000 ft/min down.

In the four mile round trip to Carseland and back to the street, I lost about 4000 feet. I felt like a hang glider, and here I was, low yet again. But through no skill of my own, I got 700 ft/min under the street, and took it right to cloudbase. Home, James, and don't spare the horses.

With a mere 53 km to home, and a cloudstreet as my guide, I pulled out Pricilla. And I didn't believe what she said — I could get home in a straight glide at 70 knots with an 1100 foot cushion — I couldn't even see Cu Nim, and Pricilla said I could fly there. SO I crept along in the street, staying as high as I could, and I even thermalled back to cloudbase about halfway home.

And I got back to Cu Nim at 9200 feet, over 5000 agl, after four hours 20 minutes in the air. What a wasted effort, that last climb. I spent more time burning off the 5000 than it took to climb it. On the ground at 4:40, for the first time I listened, really listened, when others who had been on tasks were recounting the stories of their "easy" flights.

"Sure, it was easy," they said (I'd heard that before). "Well, sure, there was a small inversion. A struggle if you got low. And sure, there was some rain you had to avoid, but so what? And the final glide was classically simple, right off the computer. But it was easy, dead easy. Could have done 1000 km, no problems." Or so they said.

So what did I learn? Lots, quite frankly. I'd read somewhere (George Moffat, I think) that your final glide calculator is waste baggage if you don't believe it. And it was, because I didn't. So I have more faith in Pricilla than I ever did before.

And I learned that if you make a rule, like "don't go below 8000", there is usually some reason. There's no point in making them if you're breaking them, so if I make them again, I'll stick by them.

I learned that flying cross-country is like flying around home without being able to see home, so you have to slow down, remember your training, and not fly like an idiot. I suspect that's why some really good cross-country pilots I know don't do well in competitions — it's perceived to be some other kind of flying, but it's not really.

I learned that 1500 feet AGL is no place to be trying to recall circuit procedures for a busy, uncontrolled airport, especially if you're straight over top of it. It distracts your attention from the job at hand, you're probably in somebody's way, no one is expecting you there, and despite the fact that they're supposed to be staying out of your way, that's not the place to have that discussion. Better to pass on the airport and land safely and calmly in a nice plowed field than to fight the traffic.

I learned that flying cross-country is not flying where you are, unless where you are is 1500 in zero sink. Flying cross-country is flying ten miles ahead of where you are. Seeing the rain showers, seeing the clouds petering out, realizing you can't afford to get below 8000, planning where you're off to. Not just flying around aimlessly.

I learned that flying cross-country is work, and damned hard work at that. My level of respect for the good, "always makes it back" cross-country pilots that I know is a lot higher now, and I know that there's something I can learn from them. But I have to ask the right questions, because for them, "It's easy."

But most of all I learned that although flying cross-country is fun, it's not really my kind of fun, thank you very much. I proved to myself that I can do it, but it's not my cup of tea. I said at the beginning of this story that I never claimed I was the best pilot that ever lived. I come to the club, go flying, have fun, land, and that's about it. And because of that, my first cross-country will likely be my last. □

AN UNUSUAL WAVE

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The significant feature of the wind profile (measured near the RAF airfield of Leuchars) was a layer where the speed decreased with height near the cloud top.

The strength of lift depends partly on the steepness of the streamlines of wave flow. If the streamlines are almost vertical, the lift can be extremely strong. The angle of the lee slope has a marked influence on the streamlines through the primary wave. A steep descent from crest to foot of the ridge may result in a steeply ascending set of streamlines on the upwind side of the primary wave. This is only true if the descending airflow can follow the shape of the ground. If it breaks away from the slope, as is likely if the wind speed is too strong or there is a sudden change in the slope, then an eddy forms and the main flow takes up a more gentle angle of descent.

If, instead of increasing, the wind speed above a certain level started to decrease with height, then the streamlines would become steeper. The combination of a steep lee slope and a decrease of wind speed some 3000 feet above the mountains can produce near vertical streamlines in the primary wave.

In these circumstances there may be a rotor inside the wave cloud. It is also possible to have another (cloudless) rotor turning in the opposite direction situated between the wave cloud and lee slope. The top of the wave cloud may then be pulled into the circulation of the clear rotor to give a curving overhang apparently moving against the wind.

When the upper wind does decrease with height, the wave energy ceases to be trapped and it can "leak away". In this "leaky mode" each successive wave is much weaker and the primary wave may be the only one soarable.

The manner in which the Talgarth wave ceased to maintain a vertical flow and then began to produce further waves downstream suggests that the wind profile was changing. An increase of speed in the light wind layer could account for the streamlines becoming less steep in the primary. A steady increase of wind speed with height would then favour the growth of a train of lee waves instead of just one.

Near vertical streamlines are unlikely to develop due to the steepness of the lee slope alone. An extra factor is needed: a decrease of wind speed with height.

In most textbook examples of wave flow, the vertical profile of wind speed shows an increase with height. The maximum amplitude of the wave, and the steepest streamlines, normally occur within the most stable layer above the mountain top. Where the wind is very strong the streamlines tend to be almost flat. In these circumstances, the wave energy becomes "trapped" below the level of maximum wind and a long train of lee waves can develop downstream. □

FAI BADGE RULES — AMENDMENTS

Larry Springford
FAI Badge Chairman

Amendments to the FAI Sporting Code were described and interpreted in the free flight May-June 1985 issue by Tony Burton. Since then, further amendments have been approved and some interpretations have been made. This article will repeat the amendments from Tony's article (because I have included amendments to the SAC Booklet — FAI Badge & Record procedures (4th Edition, Nov. 1984) as well as the FAI Sporting Code Section 3, Class D, Gliders 1981). However, I will not repeat the numerous helpful hints which Tony included in his article. I recommend that the interested reader review that article. Further amendments to the Sporting Code are expected soon, as well as the issue of an updated Sporting Code. When these are received, the SAC Booklet will be revised.

What follows is:
- first of all, a summary of the effects of the new rules,
- then, for those who have copies of the references listed above, amendment sheets which will permit them to be brought up to date. These amendments were issued under cover of a letter from FAI dated 4 Feb 1986. (By the way, all Official Observers are required to have a current copy of these two references.)
- finally, some interpretations of rules, both existing and revised.

Summary of changes

- A Diamond Goal flight around a triangular course must be flown in the sequence designated in the declaration, ie. if a clockwise sequence is declared, a counterclockwise flight is invalid. Note that only triangular or out and return tasks are acceptable for Diamond Goal flights!
- Distance flights for the Gold badge and the distance Diamond may be flown around not more than three previously declared turnpoints. The sequence of these turnpoints does not have to be designated in the declaration. Each turnpoint must not be turned more than once. A straight out flight, or straight out with a dogleg is still acceptable for distance flights.
- A multiplace glider with only the pilot on board shall count as a single place glider.
- National speed record categories of 750 km and 1000 km out and return have been added.

2.2.1 Third paragraph to read:
Only one flight course may be declared on any flight, with the exception of some badge flights as stipulated in 5.2.5, for which a designated sequence is not required. (Approved 29 Mar 1984)

4.3.1 A new third paragraph to read:
A multiplace glider with only the pilot on board shall count as a single place glider. (Approved 25 Mar 1983)

4.3.2.8 First paragraph to read:
Speed over an out and return course of 300 km, 500 km, 750 km, and 1000 km. (Approved 25 Mar 1983, valid from 1 May 1983)

5.2.1 Second line to read:
Distance: a flight over a straight course of at least 50 km. (Approved 26 Mar 1982)
NOTE: This change is included in the latest printing of the code.

5.2.3 Fourth line to read:
Diamond Goal: a flight of at least 300 km over an out and return or triangular course, flown in the designated sequence. (Approved 29 Mar 1984)

5.2.5 Table removed, completely new wording:
DISTANCE FLIGHT REQUIREMENTS
Distance flights may be flown around not more than three previously declared turnpoints, the sequence of which need not be designated. However, each turnpoint must not be turned more than once. (Approved 29 March 1984)

5.3 Third paragraph deleted. (Approved 29 Mar 1984)

6.4 to read:
Any record listed in chapter 4 may be claimed as a motorglider record provided that there is proof that the motorglider launched itself and that the means of propulsion was inoperative during the performance, and that the requirements of 6.5 and/or 6.6 as applicable were fulfilled. (Approved 29 Mar 1984)

7.3.2 New article:
WEIGHT LIMITATIONS The organizers of World and Continental championships may limit the maximum weight in any class. Any such limitation should be stated in the official bid and must be approved by the CIVV. (Approved 29 Mar 1984)

FAI Sporting Code amendments

3.7(c) New paragraph to read, in lieu of the present one:

"A distance flight of at least 300 km (186.4 miles) flown around not more than three previously declared turnpoints, the sequence of which need not be designated. However, each turnpoint must not be turned more than once. Straight out flights with no turnpoints are acceptable."

3.8(c) New paragraph to read, in lieu of the present one:

"A distance flight of at least 500 km (310.7 miles) flown around not more than three previously declared turnpoints, the sequence of which need not be designated. However, each turnpoint must not be turned more than once. Straight out flights with no turnpoints are acceptable."

3.11(c) Delete all after "diversion".

I have provided the SAC National Office with copies of these amendments to include with any booklets which they sell in the future.

Rule interpretations

Article 3.6 of the SAC Booklet states that the take-off point may be used as the "point of departure". This is incorrect since the Sporting Code (Gliders), article 1.5.3 specifies only three means of identifying the departure point on a glider flight:

1) point of release; or
2) cross a start line; or
3) photographic proof of a remote departure point.

Based on this interpretation, for any flight where it is intended to use the take-off airfield as the point of departure, unless the release is overhead the field, a photo (in the correct sector) must be taken of a significant feature on the airfield.

This is particularly important for goal or O & R flights since they are only valid if the glider returns to the "departure point". That return is defined in article 1.7.6.1 of the Sporting Code (Gliders) as:

1) landing within a 1000 m radius of the centre of the goal; or
2) crossing the finish line; or
3) correct sector photo or the remote finish (and departure) point.

This section of the SAC Booklet will be rewritten for the next major revision.

If the regulations are to be used which permit continued free distance to be accumulated after the last turnpoint (which is usually the declared goal), the turnpoint photo must be in the correct sector for the final free distance leg. This may be a different sector than would be required if the last declared turnpoint was the goal. These sectors should be thought out ahead of time (on the ground). Probably several photos should be taken to cover the potentially required sectors.

While speaking of free distance flights, I should point out that a maximum of three turnpoints are permitted. Therefore, it is not permissible to declare and fly a quadrilateral course and then fly free distance from the final (fourth) turnpoint. With the introduction of the free distance flight after declared turnpoints, the previous restriction requiring the pilot to land within 10 km of his course line if the goal is not achieved, no longer applies.

If you are interested in badge flying or trying for records, please review these changes. If you are an Official Observer (OO), you have an obligation to know these changes. I encourage all Club Senior OOs to ensure that their club members are up to date. Credit is due to Jim Oke for his advice and information in this article — particularly the interpretations. □

SAFETY

BELOW 500 FT

Derek Piggott
from SAILPLANE & GLIDING

When should the circuit speed be increased in preparation for landing?

It seems that this is still a matter of some controversy among instructors. I think there are a number of good reasons for doing it before turning into the base leg and very few if any for leaving it until the base leg itself.

Normal cruising speeds are really only adequate for average angles of bank on turns at height and not when near the ground on turbulent days. At any time when a sudden height loss would be serious, extra speed should be used to reduce the chance of an inadvertent stall in the event of an error in speed control or a loss of speed due to turbulence. It is particularly important to form the habit of checking the actual airspeed readings every few seconds as the top priority item during the final stages of the circuit and approach. But perhaps an even more important reason for extra speed is that it reduces the possible loss of height caused by flying through sinking air. You may think that you can gain speed when sink is encountered, but it may be rather too late to pick up speed when the strong sink is recognized by the variometer reading.

When flying slowly, there is a very real risk of losing so much height so quickly that the glider is by then too low to allow time or height to pick up speed for a safe turn in to land.

For safe flying in a glider, it should be the norm to have some height in hand for the majority of the circuit and to require the use of some airbrake to use this excess up on the base leg. Without this reserve, the pilot is relying on normal sink at all times. If the airbrakes are going to be used on the base leg, it is obviously essential to have some extra speed so that they can be used without hesitation and without the delay needed to gain more speed. In most gliders the stalling speed is increased by about three to four knots when the airbrakes are opened, and the effect of even a slight error allowing the nose to rise for a few seconds can result in a large loss of speed due to the drag of the airbrakes.

The only argument in favour of allowing the student pilot to delay the increase of speed any later than just before the turn on to the base leg is that it allows more time on the base leg. In smooth conditions, it could also conserve a little more height. This is a poor argument because it is encouraging the student to fly slowly, exposed to the risk of flying into sinking air or turbulence which could then result in a disastrous height loss.

With the extra work load at this time, there is a high probability of the student making a poorly controlled turn on to base allowing the aircraft to become rather slow or even semi-stalled. This could well be a fatal error. An experienced pilot may feel certain he will not make errors in speed control or circuit judgement and then there is a great temptation to try to be dead accurate. But it is always a better policy to having something in reserve rather than try to be one hundred percent right. You can always use up height when you want to, but you cannot regain it.

My case for increasing speed at a given height and always before turning on to the base leg is as follows:

While flying slowly, the pilot has a false idea of how much height there is because there will always be a considerable loss of height to gain speed for a well banked final turn, particularly one in turbulence. (Well banked turns are both safer and take a shorter time to complete, so reducing the height loss and the effects of drift in windy conditions.) Once the speed has been increased and is being maintained, the height remaining is "real" height available for maneuvering. If necessary, a turn can be made immediately without the need for further gain of speed.

At low speed, the glider is far more vulnerable to lift and sink and any sudden loss of height. Flying slowly below 4-500 feet could leave the glider "low and slow" and in an impossible position to both pick up the necessary speed and to make the final turn for a safe landing.

If a downwind check is being used and if it includes "speed", it cannot be left until the base leg without serious overloading so that the pilot has too many things to do in too little time. Particularly on a field landing even the most experienced pilots need all the available time, so when the base leg is too short there is always the risk of poor speed control, or missing some vital action such as lowering the wheel or resetting the flaps.

Picking up the speed before the base leg reduces the work load on it. All the vital actions and downwind checks can be completed without rushing, and this allows more time to retrim and settle down at the chosen speed. The base leg then only involves watching the landing area, the airspeed and deciding when and how much height needs to be thrown away to put the final turn in exactly the ideal position and height in relation to the landing area. The extra speed gives a greater margin above the stall and must, therefore, make the turn on to the base leg far safer. This is a definite anti-stall and spin precaution.

How much extra speed?

This is very much a matter of opinion. When the pilot is more experienced he should use his own judgement. There are other details of flying technique which are similarly a matter of opinion, for example, the approach speed. It can be argued that there is nothing wrong with the pilot electing to make his approaches five knots faster than other people do. It merely means a longer float which can be allowed for by moving the aiming point back a little. What is not acceptable is for the pilot to choose one speed, but to fail to achieve or maintain it because of poor speed control. This can be dangerous because sooner or later he will end up far too slow or at the wrong speed for the prevailing conditions. The pilot who "judges" his approach speeds will risk breaking the glider when landing on an uphill slope. The illusion of approaching too steeply will invariably make him reduce his angle of approach and so run out of speed for the round out.

Most pilots would agree what is too slow because it results in a heavy landing. I always suggest to my students that they use a speed which allows for a normal hold off and slight float using full airbrake throughout. This enables them to make a safe landing if they are overshooting slightly and need all the airbrake to prevent a bad overshoot. Later, I would explain the advantages and also the hazards of choosing a lower speed. Similarly with speeding up for the last portion of the circuit, it is important to have enough speed and to understand why it is being increased early.

The actual approach speed is largely dictated by the wind gradient and turbulence existing at the time. However, the speed on the base leg is a matter more, I think, of having sufficient to keep a good margin through gusts and to minimize the effects of sink. Increasing the speed up to the full approach speed of 60 or 65 kt on a windy day creates some extra problems for the student. Unless there is a headwind component, there is far less time at these speeds to make judgements and adjustments on the base leg. Inexperienced pilots always find a shortage of time and this is made worse by higher speeds. Experts can also find themselves under a high work load, flying new types of gliders, using water ballast, flaps, retractable undercarriages, and leaving their decision height too late.

If the full approach speed is put on very early on the circuit, unless extra height is allowed for the downwind leg, the loss of height may well make a normal circuit into one where the glider has to be turned in early to avoid running out of height.

I recommend that some minimum circuit speed be used for the turn onto base and for most of the base leg, but that the final increase in speed to the approach speed is better left until just before the final turn.

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CLUB NEWS

UN PEU DE CHAMPAGNE

Comme le vin les années se suivent et ne se ressemblent pas. Il y a de bons crues et il y a les autres.

La dernière saison de vol à voile fut peu satisfaisante à plusieurs égards en ce qui me concerne. Surtout du à certain événements dans ma vie personnelle. Que de la piquette quoi.

Afin de remédier à cette état de fait peu agréable je décidai de visiter un vignoble différent. Je me suis offert OSHKOSH 1987. Quel crue. Quelle ivresse de voir autant de gens qui ont le même intérêt, l'aviation sportive. Je me suis soûlé une fois par jour pendant quatre jours. Ce fut une dégustation différente chaque jour. Tous les sens furent mis à contribution. On ne peut déguster du matin au soir s'en s'ennivrer.

Je fus particulièrement surpris lors de la présentation d'un pétillant d'origine mixte. Le cépage est d'origine européenne. Il s'appelle Manfred Radius. Présenté dans un superbe contenant, un Salto. Mais le tout est arrivé à maturité en terre Canadienne. Ma femme et moi fumes particulièrement tiers de voir évolué Manfred, sa routine très bien agencée en surpris plus d'un. Les commentaires sur la qualité et la précision de son exécution furent très nombreux. Les gens autour de nous ne tarissaient d'éloges. Quelle fierté tout-à-coup d'appartenir à cette confrérie puisque je suis aussi un vélivole Canadien. Cette journée la nous étions plus de 80,000 spectateurs présents. Et nous venions d'être traité au champagne.

Golf Sierra

BONNECHERE NEWS

Well, Bonnechere Soaring is still hanging in there. Membership has increased slightly, but did not result in much of an increase in flying. The towpilot situation has much improved with the addition of two local power pilots, Danen Heath and Jim Long, who have become qualified towpilots. They have really been a great help to the club.

Our Blanik was back in operation this year after its mandatory ten year overhaul. This was nice, as we have sold our 1-26. Our club fleet now consists of the L-13 and a 2-22. We also have available to the club an IS-28B2 which has proved very useful for passenger flights.

Our financial picture was improved by the sale of the 1-26, but this was quickly taken care of when some unexpected engine work developed on the PA-18. The summer months did not work out too well in our area so we have not had very many flying hours this year, which also has not helped revenues.

In the early part of the season, we set up a display of the IS-28B2 and a Skylark 4 at the local community airport when the local Flying Club sponsored a Fly Day to raise money for charity. The event was well attended by the public and resulted in some inquiries. We do, as always, remain optimistic.

Iver Theilmann

TINKLER TROPHY AND FUND

The Manitoba Soaring Council has struck a trophy in recognition and honour of Jeff Tinkler's contributions, support, and promotion of the sport of soaring. The Dr. Jeffrey Tinkler Memorial Trophy, Novice Class, will be awarded on the basis of an annual competition by pilots who have not been checked out for cross-country flying.

The DR. JEFFREY TINKLER MEMORIAL SCHOLARSHIP FUND has been established at the University of Manitoba. Friends and members of the soaring community may make donations payable to the "Dr. J. Tinkler Memorial Scholarship Fund",

c/o Dept. of Mechanical Engineering
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

Receipts will be issued by the university.

Fred Kisil
WGC

FALL SAC DIRECTORS' MEETING

abridged from minutes by
Al Sunley, Alberta Zone Director

Meeting was opened at 0900 Saturday by Gordon Bruce, chairman. Jerry Dixon was the only one absent. Jerry had the unfortunate luck to fall from his roof while working on it. A sympathy card was signed by all present. Gordon Bruce gave a vote of thanks to Nancy Nault and Jim McCollum for all the extra work being done at the National Office. A motion was carried, "that publication of member fees or dues include an item mentioning the amount of the half-year membership dues, their effective date and to whom they may apply".

Membership lists Request clubs to make certain to include *complete address and* postal code.

During discussion of a target date for membership cards and lists it was considered that the earliest possible date would be July with a second list produced in November.

Official Observer and Instructors
Registration needs to be updated and it was agreed that the National Office will begin this task in the near future.

Calendars There's been a good response to the Segelflug-Bildkalender. The 1988 calendars would be distributed by Bob Carlson and Al Schreiter in Toronto to reduce shipping costs. The administration would be done at the National Office. A motion was carried, "that SAC purchase 400 Bildkalenders for resale to members at $23.00 per copy postpaid plus provincial tax where applicable".

Financial report Jim McCollum gave a review of the finances up to the present date. Membership appears to be up from last year. Reconciliation of the insurance accounts should be completed shortly and hopefully there should be no outstanding accounts at year end. There is not much hope of receiving government grants in 1988 so they will not be budgeted, although a special effort will be made in obtaining some. Jim requested information from the directors as to reasons for the government not to recognize special consideration for grants. There was discussion on changing office premises as rent could be significantly less. The Aero Club of Canada is trying to obtain confirmation from member organizations as to their space needs. More info required. Flight Training and Safety committee under budget by $7,500 as they have not met so far this year. Sale price of articles from National Office need to be reviewed to better cover costs involved.

The board expressed appreciation for Jim McCollum's continued efforts this year notwithstanding his other commitments and desire to obtain a replacement.

Regarding membership fees, a motion was carried, "that the SAC half-year membership rate come into effect 1 August of each year, starting 1988, for new members". (Members of the previous year are not normally eligible.)

Insurance Due to our dismal showing this year with the high number and costly accidents, there is a strong possibility of an increase in the premium rates next year. There was considerable discussion on how to impress on the membership individually and at large the need to increase the safety factor. With a group policy how can those pilots responsible for our increased rates be made to compensate? If it was car insurance, they individually would be paying a much higher rate. Clubs, along with the directors, are going to be required to give some serious thought as to how safe flying can be instilled in the membership. To pirate a thought from an SSA pilot, we should be giving trophies to recognize "SAFE" pilots as well as to those trying to obtain the maximum distance in the minimum time.

continued on page 16

HANGAR FLYING

SPEED DURING A DESIGNATED TIME

This concept was presented at the 1987 CIVV conference and opens up possibilities for a new type of task at gliding competitions.

Introduction

In recent years, there has been some criticism against the current competition scheme with speed tasks only. Although pilots generally oppose a change to distance tasks with pilot selected turnpoints, it is clear that the current state of affairs is not entirely satisfactory. Large gaggles are a major problem, both from safety and sporting aspects. This paper introduces a new task concept which might find wider acceptance among pilots than distance tasks. This concept may encourage, and sometimes force, pilots to fly more on their own. It also requires more skill in in-flight planning to achieve maximum performance, and it minimizes the probability of outlandings.

Task Concept

The task is to cover as long a distance as possible between a given start time and a given finish time.

Task Setting Details

This type of task requires time registering cameras in competing sailplanes.

Each day a departure time and a finish time is set for each class. Launching of a class must be concluded at least 30 minutes before the departure time for the class.

Within 50 km of the contest site, there should be a large number of departure/finish points. A pilot may use any of these points as a departure point, and any of these points or any turnpoint as finish point for his competition flight.

On each contest day, a number of turnpoints shall be declared for each class.

Flying the Task

A pilot may use any of the declared turnpoints for his flight. Each turnpoint may be used only once in the same flight. If a pilot uses the same turnpoint more than once, any distance flown between the first and the last turning of that point shall not be scored.

A start photo must be taken after the designated start time. A finish photo taken after the designated finish time will result in a finish time penalty.

Scoring

To finish a task, a pilot has to land on the contest site after taking the finish photo.

Scoring distance is the distance covered between the start photo and the finish photo.

Finishers are scored for speed. Speed to be scored is calculated as scoring distance divided by the designated time for the task.

Non-finishers are scored for distance only.

A system for points calculation is not proposed here. There are many options. One deciding factor is whether this type of task shall be used exclusively, or if there will be a mixture of tasks in contests. If mixed with "ordinary speed tasks" (could be named "speed over a designated course"), scoring should be based on the same concept as for these tasks.

Some Advantages

- Start gate tactics are avoided.
- Classes are spread by different departure times for the different classes.
- Gaggles will not grow from faster pilots catching up with slower pilots.
- Gaggles may get smaller as faster pilots pull away from slower pilots.
- Gaggles will be smaller from the start as several start points are available.
- Pilots will have an incentive to push ahead of a gaggle as it is no longer possible to win by starting late and catching up with earlier starters.
- Outlandings due to tasks being too long for the conditions will no longer occur.
- Pilots will get going instead of hanging around the start.
- No finish line is required.

Ake Pettersson
SWEDEN

DUTCH NATIONALS

The Dutch Nationals were flown in the coldest May for the past 140 years since temperature records have been kept.

First, Standard: Dick Teuling (Discus). First, 15 metre: Bert Kuyper (Mini-Nimbus). World championship pilots, Pare, Musters, Selen, and Schuit did not compete.

For the first time ever, all launches during the championship were made by winch (in which Munster-Van Gelder six-drum winches were used). Reportedly, it presented a most impressive gliding scene with twelve gliders being winched at a time at 20 second intervals?

STOP PRESS!

IMPORTANT SOARING SAFETY SEMINAR PLANNED

In light of this season's accident record, Ian Oldaker is now organizing a full day safety seminar for Friday, 4 March 1988 prior to the weekend's SAC AGM.

The seminar is directed towards *every club CFI in Canada*. Clubs or provincial associations are urged to consider financial assistance to club CFI, deputy CFI's or safety officers to attend. Additionally, there is a possibility that SAC will provide some financial assistance to delegates; this issue will be addressed at the January Board of Directors meetings.

More information on this most important seminar will be sent to clubs by SAC as soon as possible so that clubs can plan for it.

Session topics will include: towplane upset, pilot conversion to high-performance gliders, instructional techniques related to above, instructor upgrading and revalidation, and more. The accident rate must improve.

THE FIRST AEROTOW

"Popular Science Monthly", Aug. 1927

Future "air trains", with powerful airplanes for locomotives and motorless gliders as carts, have been predicted as a result of an amazing experiment recently performed at the Karlsruhe flying harbour, in Germany. In this test, a Raab-Katzenstein biplane took to the air towing a full-sized glider — probably the first stunt of its kind in history.

While in full flight at an altitude of 100 feet, reports state the glider's pilot cut his machine loose and swooped down to a safe landing, the towing plane landing nearby.

"In my view," said the German pilot, Espenlaub, who built and maneuvered the glider, "long distances can be covered without difficulty by a plane and a glider in this fashion." Other observers are even more optimistic. They foresee an "air train" of a number of gliders carrying passengers and freight bound for several points along the line of flight. As the towing plane passed over an important town, one of the gliders would be released from the end of the train and descend with its own special pilot and its passengers. The rest of the train then would continue its flight.

How this might be done was demonstrated in the Karlsruhe flight. An automatic release enables the glider's pilot to disconnect his machine at will from the large plane by loosing the thousand-foot wire towrope.

Thanks to NZ Gliding Kiwi

THANK YOU LABATT'S

Regarding your report in 4/87 of the Ontario provincial championships, I would like to add a word of thanks to the Labbatt Brewing Company for the very generous contribution they made to this event.

Dixon More
Ontario Zone Director

GLOBE 2V GEL-CEL DISCONTINUED

Many pilots have 14V battery packs which consist of two 6V, 8 amp/h "Globe" gel-cells, part no. GC-680B (or a "Powersonic" equivalent, PC-680) and one 2V battery, part no. GC-280B. In a recent attempt to order a replacement 2V battery, I was informed by the western Canadian distributor for Globe that the 2V battery is being discontinued due to low demand.

Glider pilots who anticipate needing this battery in the near future should contact their local distributor to order out of remaining stocks.

Note: "Gel-cel" batteries will retain a safe shelf life of about six months before a recharge is necessary. Allowing a battery to become completely discharged and left that way will damage it through internal sulphation. Continual deep discharging will limit its ability to hold a full charge and the total number of recharges it will accept. A battery is very sensitive to storage temperature and its (charged) shelf life will double for every 10°C drop in its temperature.

The western Canadian Globe distributor is OEM Battery Systems, Vancouver (604) 584-4088.

Tony Burton

COMING EVENTS

6 January, **Glider Pilot Ground School**. Ten Wednesday sessions, 7-10 pm. Bathhurst Heights Secondary School, Toronto. Registration (416) 789-0551. Course instructor, David Beamish (416) 252-9901.

TBA February, **Flight Training & Safety Committee** meeting, Toronto. For further info, contact National Office or Ian Oldaker (416) 877-1581.

4-6 March, **1988 SAC Annual General Meeting**. Ottawa, Delta Hotel, 361 Queen Street, K1R 7S9. 1-800-268-1133. $55 s or d, indicate SAC.

mid-July, **Western Instructor Course.** Exact week to be given later. Hosted by Winnipeg Gliding Club. Clubhouse and campground available. Send applications to National Office. More info from WGC. Harvey Bachman, Box 1255, Winnipeg, R3C 2Y4, or Ian Oldaker (416) 877-1581.

1988 **Combined Nationals**, Hawkesbury, Ontario. More details later. Contact George Couser, Box 1082, St. Laurent, PQ H4L 4W6

POTPOURRI ERRATA

My final proofreading somehow missed a totally garbled ending to the first paragraph of Gordon's "Potpourri" in the last issue, as a result of a two-line correction being pasted down in the wrong spot. The last sentence should have read, *"The dedication of the average competition pilot is indeed a salute to those who seek excellence. It is good to see so many new faces moving up the ladder in competitions which have been strengthened by the various regional and local meets as well as...."* editor

TOWPILOT COVERALLS

In one of my earlier "musings" I focussed on the inattention that we pay to the safety of piloting towplanes. I had some suggestions, one of which was to start wearing fire-resistant coveralls. DuPont Canada were busy as I wrote setting up a program to produce nicely-made coveralls of NOMEX III™. The sewing thread is Nomex, and the closures are, to the extent that technology allows, made of Nomex as well. The front closure is a two-way metal zipper insulated from body contact —you don't use plastic zippers in fire resistant clothing because of the melt/stick hazard. There is a high collar to protect the back and sides of the neck. My only complaint is the undersizing — if you wear large, the XL will probably fit better, for example. I hope you are interested. The colour is a royal blue, with some orange fashion stripes. The vendor is MARK'S WORK WEARHOUSE, the price is $219 (unlined). So far as I know, the coverall (brand name "Gila") is available on special order only, and they are being made in Edmonton. At this point, I'm sure many towpilots are saying, "Why should I bother?" Well, look at our experience. Since 1980 at my club we have had two towplane accidents, both involved in fire, and one was fatal. There was one in Claresholm a few years ago, the pilot and passenger escaped the crash fire without injury. This year Caledon lost a towplane without a fire. Quebec tipped one of theirs onto its propeller, again without fire. For the lack of fire, I am grateful. My point is that towplane upsets and crashes occur; fortunately, most often without fire. However, if there is fire, what are your chances? Military experience is that if you have four seconds grace, you have a good chance of getting out without serious injury. That is the point and purpose of Nomex garments. They give you that chance, that grace, nothing more. They do not melt, drip, or stick. They do not burn, but char to a friable mass. There are no toxic gases. The flame resistance is inherent; not a semi-durable finish as may be the case for FR cotton. Nomex is durable. FR Rayon is comfortable and inherently flame resistant but it has lousy durability — a blend with Nomex is required to enhance mechanical performance.

Above all, remember that no garment provides *absolute* protection, all that a Nomex garment gives you is time — time to get out with a lessened risk of injury. Safe pilots hedge their bets whenever they can. Shouldn't you? And while you are at it, how about wearing a helmet and a good pair of flying gloves and sturdy shoes? A final point. I've referred to Nomex and Nomex III without explanation. Nomex is the registered trademark of E.I. du Pont de Nemours for its aramid fibre. It is the original inherently flame-resistant fibre that has been used in military, space, and hazardous application clothing for the past 20 years. I think it is fair to say that it is the standard for clothing in most work areas where there is fire, flash, or arc risk. Nomex III is an improved version that has reduced char propagation characteristics. It is best in fabric, while regular Nomex is best in thread and other high flex applications.
Bob Carlson, SOSA

OPINIONS .. continued from page 3

Cadet born and raised (1974 to 1981), I was never introduced to this technique, either in my initial training or in my subsequent years of instructing with their glider training program. In fact, my first exposure to "penetration approaches" was at a SAC club in Ontario. The point here is that I don't think the Air Cadets should be labelled with something it doesn't rightfully deserve (either that or I missed out on some exciting training, meaning that the Air Cadet training program is just as non-homogeneous as SAC's). It is also worth mentioning here that the Air Cadet organization does substantially more training flights than SAC on an annual basis.

Now back to the question at hand. At this point, I have to admit that I have been an advocate of the "penetration approach" in certain circumstances. However, I do not teach it to junior/ab-initio pilots because it obviously requires somewhat better-than beginner judgement to be executed properly, but more importantly SAFELY. In fact, I recently gave a talk on this subject at the Alberta Soaring Council's Annual Instructor and Towpilot Seminar in which I qualitatively described what I deemed to be the appropriate technique and relevant applications. However, being an engineer by training and profession, I inherently put a lot of credence in an analytical approach to problem solving. Therefore, I could be convinced of Mr. Koehler's apparently open and shut case on the subject, but only after some further discussion. I would like it known that I do not pretend to be an expert on the physics of the technique as Mr. Koehler apparently is. So at the risk of being flayed as Mr. Malebranche was for his comments on Mr. Koehler's recent article on "Bernoulli, Bah", I shall proceed as if my mouth is large enough to accept both of my size elevens!

As was mentioned in the subject article, there were three essential pieces of information required to carry out the simulation. These were: sailplane polar, wind gradient, and ground effect.

Of these three input parameters, only the sailplane polar was exact (more or less). The wind gradient was based on an algorithm taken from a meteorology text, and the effect of ground effect was an assumption based on Mr. Koehler's personal experience, opinion, or gut feel, but apparently not quantitative. Because of this inexact data, I would like to suggest that some sensitivity analysis should be conducted (on how much the simulation results are changed by varying the values of the input data). This is a typical engineering approach to covering one's behind.

In particular, let me suggest some possibilities for the wind gradient. I will leave ground effect alone, only because I think that the wind gradient variable is more influential on the end results. The wind gradient used in Mr. Koehler's analysis ($v = Ky^n$, where $n = 1/7$) results in, by my experience, a rather modest gradient over the majority of the flight path in the simulation. Specifically, from Figure 2 in the original article, a descent from 500 feet to 100 feet results in a decrease in the headwind from 20 knots to 16 knots (for a ten knot surface wind). As an aside, if one assumes the K = surface wind (not given in the original article), and one uses the units given in Figure 2, it is difficult to reproduce Figure 2 with the given equation. In fact, it appears that a slightly more severe wind gradient exists than that shown.

Back to the point at hand ... it is not surprising to me that a high speed transition through this small wind gradient is not the most efficient use of one's energy, particularly in lower performance gliders. In this situation, I concur absolutely with Mr. Koehler's conclusions. But it is at this point that I think some sensitivity analysis might be conducted.

My personal experience, especially in western Canada where the wind never stops blowing, is that a gradient of the following order is very common: for a ten knot surface wind, the wind at 4500 feet could be 30 to 35 knots, and sometimes greater. The majority of this gradient typically occurs over a very short interval, such as 200 to 300 feet (ie. from 400 feet to 200 feet, or 400 feet to 100 feet). This represents an average wind gradient over this interval of 8-10 knots per 100 feet, compared to the 1 knot per 100 feet in Koehler's study. It is not uncommon in some of the western wind conditions to lose 15 to 20 knots of airspeed on approach when transitioning through the gradient. In this situation I think it is clear that the pilot gains more by being in lower levels in this situation.

The question now is, does this increased benefit (from diving through the gradient) more than make up for the increased drag losses at the higher speeds?

A few other items that may or may not be important (relatively speaking) in the simulation are:

1 the height above the wind gradient that acceleration is commenced.
2 the assumed sensitivity of the polar to "g" loading, and
3 the use of higher performance polars.

On the first point, one does not want to dissipate too much energy as increased drag if it is in a no wind gradient or minor wind gradient situation. We already know what the optimum gliding speed is in these situations. On the second point, published polars are valid for a specific constant wing loading. When one is accelerating, however, the glider is subject to reduced "g" forces and thus wing loading. This results in induced drag. (In the limit, when g = 0 and the glider is weightless, there is no requirement for the wing to produce lift and therefore, there is no induced drag.) Since the dive and zoom simulation involves accelerations, will this factor significantly affect the results? On the third point, a high performance sailplane is more efficient at converting potential energy to kinetic energy and therefore should benefit more in a penetration approach than do the 2-33 and Blanik.

The utilization of wind gradients to gain or conserve energy is well documented. We have recently instructed our Cu Nim towpilots to be more careful on climb-outs if a wind gradient is expected, so that the increase in airspeed and thus lift on the glider does not result in an over-reaction by the glider pilot and subsequent potential towplane upset. Cross-country and contest pilots doing low high-speed finishes should consider if their pull-ups are with a tailwind or headwind with an embedded gradient. A pull-up into a headwind with a gradient will result in more height being gained (with the same initial and final speeds).

And what about dynamic soaring? Seabirds, gulls, etc. are famous for their innate ability to stay aloft indefinitely at 100 feet above the ocean by flying figure-eights or tacking in a wind gradient. There are even reported cases by Ingo Renner and others of some success in dynamic soaring in sailplanes. These are all variations of a similar theme.

In summary then, I think the jury is still out on this one, awaiting the presentation of all (or at least more) of the facts. I hope that some future work can be done to investigate this further, so that the jury does not hang itself.

Kevin Bennett, Cu Nim

Jim replies:

Thank you for giving me an opportunity to respond to Mr. Bennett's comments. I REALLY enjoyed reading it because first, he brings up some important points, and second, it's nice to see that other people are interested in quantifying some of the things we've been doing/avoiding on faith for so many years. In the order he introduced them, I would like to say something about his points:

• **Air Cadet advocacy of the 'penetration' approach**. In the summer of 1976, we had two Air Cadet instructors working with our club (they did yeoman service, incidentally, and the club owes them a debt we can never repay). They taught the penetration approach to our students as they had at Camp Borden (I believe) to Air Cadet students and where they had learned it themselves.

• **The ground effect**. Mr. Bennett is right — I have no real idea of how to quantify this. Glider pilots are given to hyperbole and I have heard stories which beggar description. I *arbitrarily* chose to represent the ground effect by a reduction of induced drag by 50% which I thought would satisfy even the most ardent advocate. If anyone out there knows of a reference to a quantitative description of the ground effect, I'd sure like to hear about it.

• **The wind gradient** I am not a meteorologist, but friends of mine who are, say that the wind gradient is well studied and that lots of measurements of it have been made and discussed in the literature. For my part, I went down to our university library and looked through about half a dozen books on elementary meteor-

ology. Every one of them mentioned it but usually only qualitatively. The one book that had actual numbers in it (the one I referred to in the article) was referring to measurements made at Edmonton (! — can't get much closer than that). Like Mr. Bennett, I have a subjective opinion about what the wind gradient is like out here on the prairies but I deferred to actual measurements.

According to the equation, the wind speed goes down to 0 at the exact surface (y = 0) so what I called the 'surface' wind is the wind at five feet. I chose this number because most people judge wind speed by what they feel in their face. Meteorological wind speed is measured by anemometers mounted some specific height above the ground (about 25 feet, I'd guess). In the example Mr. Bennett gave, the 20 knots wind speed at 500 feet is about *twice* (about ten knots) what it is at the 'surface' (ie. at five feet). I certainly agree that it is very variable and depends a lot on local conditions — all the more reason to make sure that one's approach speed is high enough.

From my own experiences, I'd have guessed that most glider pilots would have thought my estimates of wind gradient were too severe, so it's refreshing to find someone who thinks they're not severe enough.

• The effect of g loading on the polar.
Mr. Bennett is quite correct and I did completely overlook this effect. It could fairly easily be included and ought to be. My feeling is that it would not make a large difference because the assumed approach was started at the best L/D speed and at that speed, the induced drag is already somewhat less than the profile drag. As the glider speed increases, the induced drag becomes smaller and smaller compared to the profile drag, therefore any further reduction of it due to decreased g loading would be expected to be small. However, this does not invalidate Mr. Bennett's point and the calculations should be redone.

All of the graphs I derived show that the actual distance travelled varies rather weakly with approach speeds. An approach speed which is 10% too high or too low doesn't change the distance travelled very much. Based on that fact and because of the other danger of travelling too slowly (that one may stall because of the wind gradient), I feel that we ought to err, if we err at all, on the high side.

Finally, there is the question about whether a higher performance glider should use a different formula for calculating optimum approach speed. In my article, I suggested that for the 2-33 and the Blanik, one should use the best L/D speed PLUS the 'surface' (ie. the five foot) wind speed. To be precise, one should go through the calculation for every glider, but I would *guess* that this formula would turn out to be close and *certainly* better than the current SAC formula. In the interest of the sport, I will venture the sum of $0.25 that it is so. Any takers?

Jim Koehler, Saskatoon Soaring

BELOW 500 FT (concluded)

I would criticize the pilot who did not increase speed to at least 50 kt in a K-13 on a light wind day and to 55 kt in windier weather. I would probably comment that 65 kt is probably making things rather more difficult by leaving less time for judgement and adjustments, but that it is a matter of opinion when the pilot is more experienced. However, it would make good sense in rotor conditions or on a hill site curl-over.

In my opinion, any glider flying below 400 –500 feet at less than 50 kt is at risk. If it flies into strong sink or turbulence the loss of height might leave it in a dangerously low and slow situation. In fact, below these heights any strong sink could put the glider into an unredeemable position within seconds. The incidence of this kind of situation has been greatly reduced with the higher flying speeds of modern machines. This was a common cause of accidents in the T-21 /Tutor era. Numerous incidents and accidents used to occur simply because the speed was too slow on the base leg and the glider just happened to fly into sink or bad turbulence. There were no second chances with a slow glider.

As a result, everyone was well aware of the dangers of continuing to fly slow at low altitude. The extra ten knots or so in the cruising speeds of modern machines has lessened the effects of sink, but the risks are still there.

In tropical conditions and other times when the lift and sink is very strong, it is common practice to require the extra speed to be put on at the start of the circuit well upwind and at a height of 8-900 feet. This certainly reduces the effects of lift or sink, but seems unnecessarily high for more moderate conditions. This idea probably stems from flying low performance machine such as the Schweizer 2-22 and 2-33. With the more modern ships these tactics are less necessary.

It is always desirable to form habits which will lead to safer flying. Unfortunately, much of our flying becomes semi-automatic and unless we make a conscious effort to check what were doing, things can go seriously wrong. It is essential to understand the reasons for doing everything and the need to think about the circuit and not just allow things to happen.

Summary
If you want to live a long time, the speed should be increased: for all circuit flying below 4-500 feet, when doing downwind checks or preparing for the landing, and *before the turn on to the base leg.* This makes it far less likely that sink could deposit the glider low and slow; makes misjudgement of the height available for the final stages of the circuit less likely; makes the turn on to base safer because of the bigger speed margins and reduces the work load on the base leg so making accurate speed control easier. There are no valid arguments in favour of delaying the increase in speed until just before the final turn. □

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The following Badges and Badge legs were recorded in the Canadian Soaring register during the period 1 September 1987 to 31 October 1987.

SILVER BADGE

747	Stephen Johnson	Vancouver SA
748	Robert Sturgess	Blue Thermal
749	David Maven	York SA
750	Jane Midwinter	Rideau Valley SS
751	Neville Robinson	Winnipeg

DIAMOND DISTANCE

	Lothar Schaubs	ASTRA	505.2 km	Ka6E	Ephrata, WA

DIAMOND GOAL

	David Hogg	USA	316.5 km	ASW20	Woodbine, MD

GOLD ALTITUDE

	George Matthias	Vancouver	3475 m	Ka6E	Hope, BC

DIAMOND GOAL

	David Hogg	see Diamond Goal			

SILVER DISTANCE

	Stephen Johnson	Vancouver	80.9 km	Pilatus	Trail, BC
	David Maven	York SA	61.3 km	Monorai	Arthur, ON
	Jane Midwinter	Rideau Valley	76.7 km	Pik 20D	Kars, ON
	Neville Robinson	Winnipeg	74.5 km	BG-12	Starbuck, MB

SILVER DURATION

	William Waddington	Gatineau	6:01	1-26	Pendleton, ON
	Robert Sturgess	Blue Thermal	5:04	Blanik	Medicine Hat, AB
	Samuel Whiteside	York SA	5:17	1-23	Arthur, ON
	Jane Midwinter	Rideau Valley	5:30	Pik 20D	Kars, ON

SILVER ALTITUDE

	William Waddington	Gatineau	1067 m	1-26	Pendleton, ON
	David Maven	York SA	1341 m	Monerai	Arthur, ON
	Terry McElligott	SOSA	1204 m	Club Libelle	Rockton, ON
	Jane Midwinter	Rideau Valley	1585 m	Pik 20D	Kars, ON

C BADGES

2088	Barry Guttormson	Winnipeg GC	1:52	2-33	Starbuck, MB
2089	Dieter Kuhnke	Edmonton SC	1:18	2-33	Chipman, AB
2090	Samuel Whiteside	York SA	5:17	1-23	Arthur, ON
2091	Robert Hellier	Erin SS	1:04	Blanik	Grand Valley, ON
2092	Terry McElligott	SOSA	3:25	Club Libelle	Rockton, ON
2093	Jane Midwinter	Rideau Valley	5:30	Pik20D	Kars, ON

ACCIDENTS

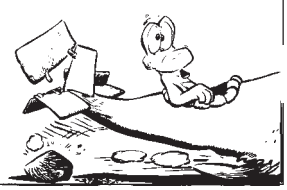
1-26, FVTX, 18 Aug, SOSA. Wingtip damage from tip wheel hitting an obstruction on outlanding. $1,700

DG-200, GVRR, 3 October, ESC. Struck bushes and landed sideways on low and slow final. Weather and wind gradient a factor. Broken fuselage.

STD ASTIR, GIZX, early October, Gatineau. Gear collapsed on landing. Gear leg, doors, local structural damage. $4,000.

BLANIK, FPZV, 10 October, MSC. Struck fence on low final. Nose, canopy, and leading edge damage. $5,000

JANTAR STD, GDBU, 14 October, Gatineau. Heavy landing and groundloop at Lake Placid after stretching a glide back to airport. Substantial airframe damage. $13,000.



ANNUAL GENERAL MEETING

4–6 March 1988, Ottawa
Delta Hotel, 361 Queen Street, K1R 7S9
1-800-268-1133

Activities: **4 March**: BoD, Prov Assns, FT&S Committee meetings, Registration and evening reception

5 March: AGM, Awards Banquet
6 March: BoD meeting, Workshops

Reservations: **$55/day** single or double (indicate you are with SAC)

Editor's Note. This issue is a thin 20 pages, and I was having an editor's worst nightmare of meeting a printing date with nothing in my basket. Much thanks to Derek and Boris for their first cross-country stories, as there is a limit to my theft from other magazines. Now is the time to write about your flights and soaring opinions — and lots of photos please. Tony

PS:
An error has been noted in the Records History data (page vi of the last issue of **free flight**) for the 100 km Speed-to-Goal by Kevin Bennett. The right speed is 118.7 km/h, not 117.9.

DIRECTORS' MEETING continued from page 11

Instructor-of-the-Year award A motion was carried, "that the Instructor-of-the-Year award be henceforth known as the 'Walter Piercy Instructor of the Year' award".

Flight Training and Safety A report from Ian Oldaker was distributed to the board as Ian was not able to attend. Ian will be attending a meeting of OSTIV being held in the United Kingdom in March. A discussion was held regarding regular site or club visits (by members of the committee). Dave Tustin will be approached for procedures on reporting near misses to MoT.

SAC 6-year plan The plan was reviewed and updated and will be distributed by the National Office. A discussion regarding AGM dates which do not conflict with Easter break travel resulted in a decision to hold it on the first weekend of March each year.

Temporary membership Reports were given by various directors on the results of clubs' introductory membership packages to encourage newcomers to the sport. The methods used by Bluenose, MSC, ESC, RVSS, and VSC were reported and the results noted. It was suggested by Dixon More that reports on these packages be published periodically in **free flight**.

Statistics Directors are to remind and urge their clubs to fill out and return the SAC club statistics forms promptly this fall at the completion of the flying season. Clubs to be reminded that the statistics are an MoT requirement. Clubs are urged to report all incidents.

Video library project Gordon Waugh (Maritime director) is building a library of video tapes on soaring. He wishes any club members who have video tapes of special events (nationals, provincial, instructors schools, open houses, etc.) to please contact him so that he may have copies made. He also wants information on any commercial videos that clubs have been involved in (such as CBC documentaries, etc.). A motion was carried, "that Gordon Waugh be authorized to spend up to $300 in the fiscal year 1987 to purchase commercial videos related to soaring".

The meeting was adjourned 1405 on Sunday.

Trading Post (page 17) and back page omitted