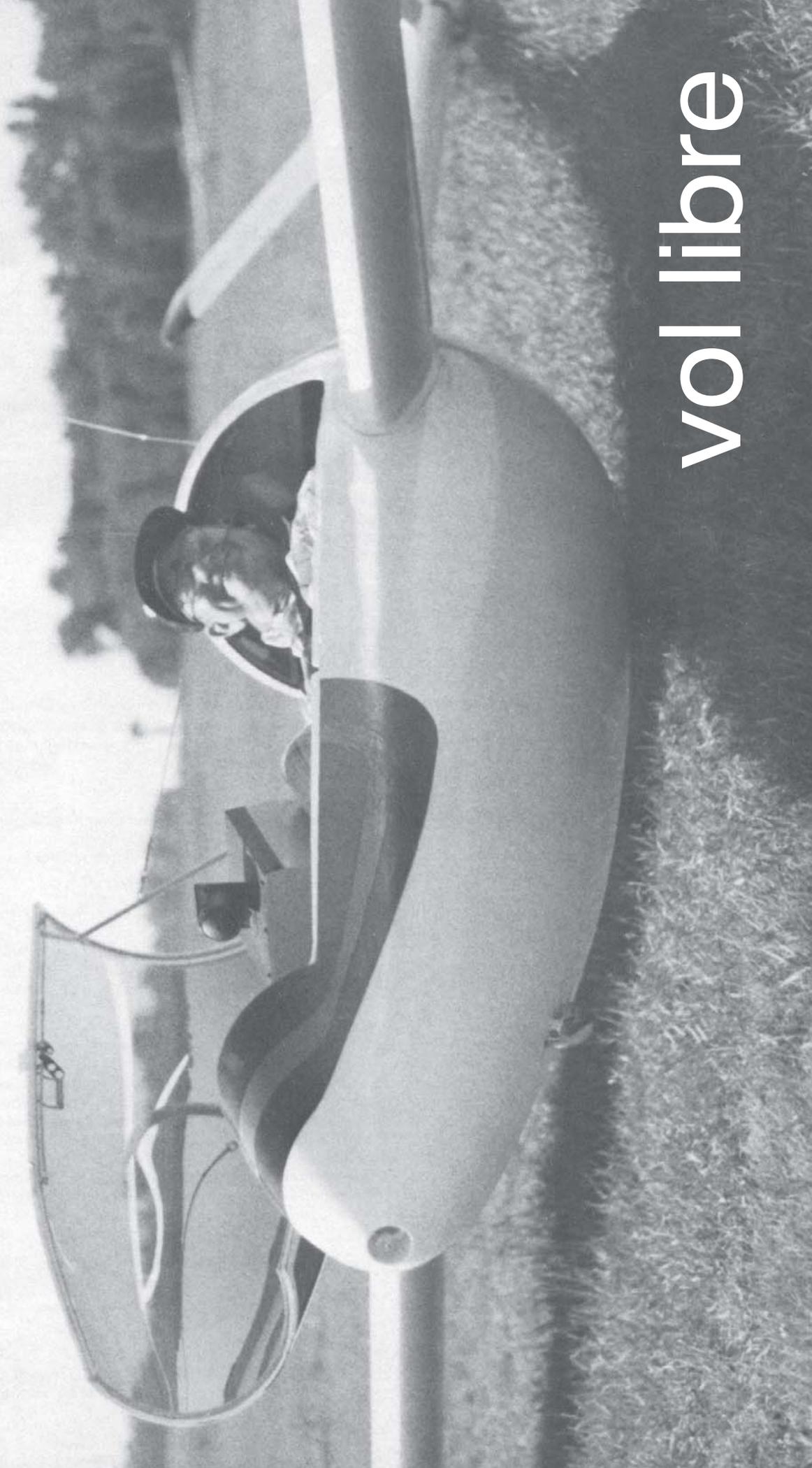


free flight

3/82 May-Jun



vol libre

PRESIDENT'S MESSAGE

The Soaring Association of Canada is an association of clubs. Most of us are members of the SAC through membership in a SAC club. We are represented in SAC decisions by a director elected by the clubs within a particular region or zone. There are currently six zones, four of them coinciding with provincial boundaries (British Columbia, Alberta, Ontario, Quebec) while the Prairie Zone comprises Manitoba and Saskatchewan, and the four maritime provinces (Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick) make up the Maritime Zone.

Quite independently of the SAC zone structure, clubs in a few provinces have formed provincial organizations to act as a forum for exchange of ideas, combined club events etc., and also to act on behalf of clubs in dealing with provincial governments, particularly with regard to funding. Until quite recently only three such provincial organizations existed, and had obtained funds on a scale varying from a hospitality grant in association with a national meeting to large contributions to capital investments.

However, a considerable impetus was given to the formation of provincial organizations when the federal government made it clear that no more federal funding would be available to SAC unless we were also being funded by six provincial governments. (As you know this reduction in federal funding had a considerable effect on the membership fee structure of SAC.) As a result of this encouragement to organize provincially, we now have **nine** provincial organizations of which eight have received funding in some measure. The benefits of this to the sport of soaring can be felt at all levels. First of all, more people are involved with decision making and organization within the structure of the sport. As a result there is more contact, and therefore better liaison between clubs. Many provinces provide support for clubs through the provincial sports administration offices, which may include duplicating, printing, mailing, secretarial services, etc.

Provincial funds have also been made available for competition support, hospitality, hangar construction, aircraft purchase, travel (to meetings and contests) and a host of other items. Naturally, funding available for amateur sport governing bodies varies widely from province to province, but it can benefit all of the clubs in a province when used appropriately.

In addition to these benefits SAC has been enabled to meet the criteria for federal funding, so that we are very hopeful of receiving significant support for 1982-83 for a number of specific projects (by the time you read this, we will know for certain). In addition we have regained "non-resident status" at the National Sports and Recreation Centre with the attendant benefits, again mostly in the area of "administration" support.

While there is no direct administrative link between the national and provincial organizations, close contact is being maintained, and some of the provinces have signed affiliation agreements with SAC. This formal liaison of association is recommended for all of the provincial association as it provides a recognizable relationship in the structure.

The Board of Directors of the SAC believes there are great benefits to be derived from strong provincial organizations and wishes to encourage them. With this objective in mind, a "SAC Development Week" is planned for September which is directed specifically towards developing leadership at the provincial level in the areas of Club Operations, Competitions and Pilot/Instructor Training. Plans for the event are well developed and execution hinges entirely on the availability of funding (which has been requested) from the federal government.

Not so long ago SAC was a relatively small organization. The membership was small and activity was limited. Membership had doubled in the last decade (not quite keeping up with inflation!) but the activity of the association in all fields (competitions, government lobbies, club development, badge flying, communication) has grown much faster. I believe that we have reached a point where more regional (ie. provincial) autonomy is necessary and desirable. We have already seen provincial soaring competitions, hosted by provincial councils. Provincial Coaching Clinics (ie. Instructor Schools) will be next.

A strong national organization is in the best interests of all of us but this strength must flow from the "grass roots" of the structure. Provincial organizations can greatly assist and increase this flow.



Russ Flint
President

Have you noticed that **free flight** is now mailed first class? I hope you enjoy receiving the magazine with early news rather than late information. The Notice of Motion at the AGM proved to be very fruitful, and a vote of confidence to **free flight's** timely continuance was expressed.



free flight

3/82 May-Jun

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Le Journal de L'ASSOCIATION CANADIENNE DE VOL À VOILE

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photo: Bruce Wilkin

Cover

There is no wider grin possible than that from a happy new father. Dick Higgins is shown right after the maiden flight of his homebuilt Monerai.

AGM 1982

Jim Leach

ATTENDANCE 106 members officially registered in the SAC registration book. 25 of the 46 sustaining member clubs from our 1981 operation were represented. In addition there were 7 proxies presented by authorized delegates bringing to 32 clubs the combined representation. In effect, 70% of our membership were represented at our 1982 AGM.

LONG TERM PLANNING — PRESENTED BY DR. RUSS FLINT The President spoke to a series of slides which showed the 1981 membership statistics by province. This presentation indicated an overall 6% growth in membership and the acceptance of three new clubs as full sustaining members.

SAC DEVELOPMENT WEEK — BY JIM LEACH Yours truly outlined the plans to conduct a 4-5 day seminar to be conducted at CFB Borden during the last week of September 1982. The intention would be to bring together three provincial reps from each province to discuss and establish firm plans for the future in our three primary areas of programming (Club Operations, Competitions, and Pilot and Instructor Training). The final decision on this program is dependent on federal government funding for travel purposes. Details will be forwarded to club presidents and provincial organizations as they become known.

PUBLICITY — BY DAVE PUCKRIN Dave Puckrin, Chairman of the Publicity committee, addressed the AGM briefly with his concepts of publicity requirements for SAC. He appealed for more calendar slides and ideas for promoting the sport. Dave urged all members to attend the publicity workshop scheduled for Sunday, 21 March 82.

TRADE COIN PROGRAM — PRESENTED BY DR. KARL DOETSCH Karl presented an update on this program. It was considered that the face value of the coin would be \$5 and the primary marketing outlet would be the World championships in addition to Nationals, Regionals and club outlets. Production costs were estimated at .81 cents each. The initial design would cost \$1000. Jim Carpenter offered to provide the services of his business for the initial design and donate the fee back to the World Contest fund.

1983 WORLD CONTEST—PRESENTED BY OSCAR ESTEBANY Oscar advised that the primary concern at this time was the raising of funds. Clubs are urged to promote fund raising programs in support of our National team and individuals were asked to submit their donations to the National office. Official tax receipts are available for all donations over \$5.00. Other possible fund raising techniques included a national lottery with tickets selling for \$20.00 and the prize would be an ASW-20 or equivalent cash.

ANNOUNCEMENTS The President advised that SAC had been reinstated as a "Non-Resident Sport" by the Fitness and Amateur Sport department of the federal government. Members were urged to consider filling the vacant chairman positions for the Membership and Provincial Association committees. Colin Tootill advised that plans for the 1982 Nationals scheduled for 1-10 July 1982 were well launched. Practice days were scheduled for 26-30 June. Coca-Cola had donated \$3000 for poster production. Molsons had agreed to sponsor the Nationals in a variety of public relations oriented projects. T-shirts will be available to commemorate the event, Global TV will produce a 23 minute video tape for a late July or early August viewing.

LICENCING REQUIREMENTS AND INSTRUCTOR CLASSIFICATIONS Alex Krieger advised the action taken to date in reviewing licencing requirements. As this matter was the subject of a notice of motion, time on this subject was limited to explaining the background which led up to the motion. (See motion #2). Ian Oldaker advised action taken to date by the Instructor committee in response to the Transport Canada proposal for the revised 3 class instructors endorsement program and all its implications. It was explained that SAC's position was to attempt to ensure that the program be self administered within SAC. It was explained that Transport Canada wished to have the revised program in place by 1984. Negotiations are still in process.

INSURANCE — PRESENTED BY AL SCHREITER It was explained that those endorsements included with the 1981 policies that were found unsatisfactory by many SAC members had been deleted for the 1982 insurance year. A letter to all clubs prepared and dispatched from Wyatt International Insurance Agency had been sent explaining the requirements for the 1982 insurance year. The chairman of the Insurance committee requested that where payments resulting from claims were not received within 60 days of signature of the release forms, the chairman of the Insurance committee should be advised for necessary follow up action.

AGM BUSINESS MEETING (HI-LITES ONLY) The meeting agreed to increase the proposed membership fees by \$1.00 to cover costs associated with mailing *free flight* first class in envelopes. After considerable discussion, the meeting agreed to accept the resolution prepared by the Board of Directors regarding the licensing standards provided the statement "spins to the right and to the left with appropriate recovery" be deleted. Please refer to the President's letter of 3 Februar 1982 for precise wording. The official AGM report will of course have the final wording. The resolution submitted by the Board regarding the creation of a new membership category referred to as "Air Cadet Affiliated Member" at a 1982 fee of \$21 was approved. The resolutions regarding revision to the National team selection procedures for the 1983 World championships were approved as amended to provide for the short time period between the completion of the 82 Nationals and the World championships in Jan 1983. The amendment provides for the organizer to compile the seeding list six months prior to the World championships and pilots invited to join the team will have two weeks to make a definite commitment to go. The final Board sponsored resolution regarding Director's responsibility took some time to resolve. While everyone agreed with the intent of the resolution, the precise wording took some time to evolve. It was finally agreed to word the motion in such a manner that the existing article should not be interpreted to disallow discussions or negotiations with appropriate authorities to arrive at a position for members approval.

CONCLUSION While the 1982 AGM is now history, SAC is indebted to the Montreal Soaring Council for their efforts in supporting the organizational aspects. Thanks to President, Gordon Bruce, MSC AGM coordinator Walter Ekiert and Arnold Rosner, Herbie Meier, Laurie Pearson, Kate Estebany, Robert Pal-freeman, Beverly Lewtas, David Lewtas, Kevin Conlin and Stephan Braginetz for being wherever they were needed and doing everything they were asked to do. Their cooperation was much appreciated.

EXECUTIVE DIRECTOR'S NOTE — AIRCRAFT TYPE APPROVALS TRANSPORT CANADA OFFICIALS HAVE REQUESTED THAT SAC MEMBERS CONSIDERING THE PURCHASE OF AN AIRCRAFT CONFIRM THE STATUS OF CANADIAN TYPE APPROVAL BEFORE FINALIZING THEIR TRANSACTION. SUCH CONFIRMATION SHOULD BE MADE THROUGH THE REGIONAL OFFICE OF TRANSPORT CANADA.

The SOARING ASSOCIATION OF CANADA

is a non-profit organization of enthusiasts who seek to foster and promote all phases of gliding and soaring on a national and international basis. The ASSOCIATION is a member of the Royal Canadian Flying Clubs Association (RCFCA), the Canadian national aero club which represents Canada in the Fédération Aéronautique Internationale (FAI, the world sport aviation governing body composed of national aero clubs). The RCFCA has delegated to SAC the supervision of FAI-related soaring activities such as record attempts, competition sanctions, issuance of FAI badges, and the selection of a Canadian team for the biennial World soaring championships. *free flight* is the Association's official journal.

Material published in *free flight* is contributed by individuals or clubs for the reading enjoyment of Canadian soaring enthusiasts. The accuracy of the material is the responsibility of the contributor. No payment is offered for submitted material. All individuals and clubs are invited to contribute articles, opinion, reports, club activities, and photos of soaring interest. Prints (B & W) are preferred, colour prints and slides are acceptable. No negatives will be used.

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

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

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

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

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

vol libre est le journal officiel de l'ASSOCIATION.

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

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

L'exactitude des articles publiés est la responsabilité des auteurs et ne saurait, en aucun cas, engager celle de la revue vol libre, ni celle de l'ACVV, ni refléter leurs idées.

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

Pour chaque article reçu, nous retournerons un accusé de réception et donnerons la date probable de sa publication. Les textes et les photos seront soumis à la rédaction et, dépendant de leur intérêt, seront insérés dans la revue.

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

Pour changements d'adresse et abonnements aux non membres de l'ACVV (\$15.00 par an) veuillez contacter le bureau national.

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5

OPINIONS

AN 'EMBRYONICUS' IS REBORN

As an ex-glider pilot (hopefully requalified this year), and the father of a newly qualified glider pilot, I read *free flight* with great interest.

In the Jan-Feb issue 1982, the Gliding Aviary article by Eric Newsome really rang a bell and had me chuckling. Mr. Newsome must have visited one of our local clubs, because the part about the fledglings doing all the work on the flight line rang so true. So many people seem quick to order what is to be done with the gliders, but oh so few willing to go and do it.

I soloed a good many years ago but was unable for various reasons to take my studies much beyond solo level. However, the family growing up to the point where my oldest son qualified as a glider pilot last summer, meant that I spent many hours at weekends on flight lines. Happy hours. What memories. Before I knew what was happening, the urge to fly that I thought successfully buried years ago was suddenly coming back. One fine weekend the combination of good thermals, an empty Blanik and an instructor with some spare time proved too much of a temptation and off we went for an introductory flight. That did it, hooked again. I guess the urge never really leaves you once you get it. It only hides away in the back of your mind until the time is right to come sneaking out again when you least expect it.

So, all being well I hope to join Eric Newsome's breed of Aeronauticus Embryonicus this year, but not I hope, the sub-species "Oopsicum."

M.D. Carter
Carleton Place, Ontario

SYMPATHY FROM AUSTRALIA

During the past year or so I have enjoyed reading the copies of *free flight* that come to me in exchange for our own magazine. Your January-February issue 1982, just received, includes a fine article called "Hear and be heard". I would like to reprint it in "Australian Gliding" as I think it is an important subject. Perhaps wider publication might result in someone inventing the equipment described in the article.

A letter in the same issue asks whether a club should replace its aging 2-22 with a 2-33 or use a Blanik for initial training. I don't know the 2-33 personally, but many clubs in Australia have for many years been using Blaniks and similar types (K7, K13, Bocian, Bergfalke) as primary trainers, with excellent results. These aircraft provide good soaring performance with rugged reliability and easy handling. They are not too advanced to be used for initial training. Some of our clubs are even using Twin Astirs, IS28 and Janus for initial training. Personally, I think these machines are more suited for advanced training but the clubs that use them find them quite suitable. These comments might serve as a guide to Canadian clubs.

In your article "Did you know ...", you mention that your work as editor has prevented you

from doing much flying in the past year, and you express the hope that things will change in the future. I don't want to dishearten you, but I've found that the work of producing a gliding magazine takes up almost all my spare time, so that I'm so occupied with writing about what others have done that I don't have the time to do any flying myself. Ah well, that's the price we have to pay I suppose. I certainly hope you get more flying than I have been able to achieve while serving as editor. Still, there are compensations, aren't there?

With best wishes
Allan Ash, Editor
Australian Gliding

DIAPERS ONLY PLEASE

Referring to, "Did you know that", 1/82 page 6, I am so glad to see that Mother Nature is more chauvinistic than we male pilots! However, as a physician I was a little concerned that one of our ladies even mentioned a catheter. This is a NO-NO! It would be a disaster if a young and overenthusiastic lady would try to solve her problems this way. Please advise them that, what was good for Hanna Reitsch, is at least at the moment, good for them!

Dr. G. Heinisch
Winnipeg Gliding Club

AN ANSWER TO BONNECHERE

I think a good basic trainer is one that can claim to have produced a good basic pilot, not one that has survived a poor one. Buying a higher performance single sealer? The 2-33 design goes back to the early 40s, the Blanik to the early 50s; most 15 metre ships with L/D 1:38 or 1:40 were designed 15 years ago. Thus thoughts on new and higher performance ships are not new and not an advance into the unknown, but rather a catch-up. It's so much easier to produce a better product with better tools from the first gliding day.

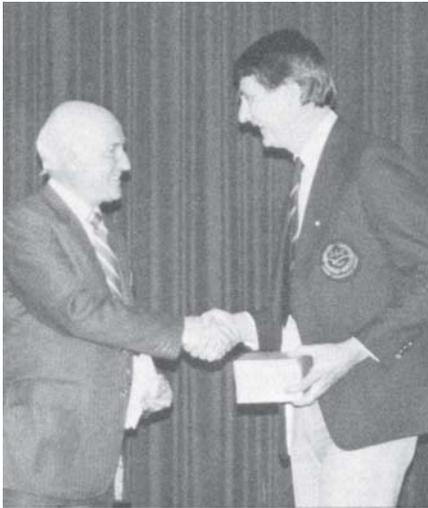
I was fortunate to visit recently a club in New Zealand. They use a Blanik for primary and advanced training, and a Kestrel 19 for a club single-seater. Once they can afford it, they want to replace the Blanik with a Twin Astir or Janus. The Kestrel has two different flap handles for starters, but the club pilots are obviously making the transition.

By current definition, I would think a Janus C is the best production two-seater, and the Astir a medium performance ship. Thus the Astir should be a basic trainer, and clubs thinking of replacing that Libelle or Open Cirrus (that it had for the past seven to ten years) with a new LS or "20". But from a 2-33 or similar ship, how can one transition to any modern sailplane?

It's essential that clubs upgrade training and equipment. There should be no gap between flying trainers and glass ships.

continued on page 16

AGM AWARDS BANQUET



Ulli Werneburg



Dave Hennigar



George Graham

Gordon Bruce

Colin Bantin

Our illustrious guest speaker was André Dumas, an old glider pilot whose licence dates back to 1956, and who has worked at Transport Canada in many senior positions. His memories of past times, and mission of today sparked through the banquet hall. All Canadian sports aviation groups ought to join into one strong interest group for more powerful representation to international aviation organizations (FAI, ICAO). Also the government agencies in Canada would favour a strong umbrella organization representing sports aviation. André Dumas is Past-President of FAI and very enthusiastic about the ideals of this organization. He discussed the many awards FAI presents for service to all segments of sport aviation as well as the well-known badges, and he urged SAC to nominate candidates for these international honours.

Monsieur André was instrumental in establishing the air cadet gliding program in Quebec and feels that SAC should give more active consideration to developing this base of enthusiastic young pilots.

Then the Master of Ceremonies Gordon Bruce, President of Montreal Soaring Council, took to the microphone, and after having denied responsibility for everything that had not met his expectations as host club, he swiftly turned to the glamour of the deeds, photo flashes, hand shaking and applause ...

"There are international badge flights, and provincial awards, there are all types of competitions. Competitions express the ultimate of any sport. They provide the goals to perfection, to improvement of technology and equipment, to new material. We should be grateful to the competition types for because of them we are able to fly aircraft which are the ultimate in aesthetic and aerodynamic excellence". We are on the right path, as proven by the 1981 winners of SAC recognitions:

Prerequisites to SAC Trophies and Awards are featured in 1/82 and 2/82 and in the Procedures Manual now held by your club President and your Zone Director.

200 TROPHY Colin Tootill, SOSA (only entry!) 1350.8 points

135 km of an attempted 300 km
169 km O&R task of 218 km at Regionals
232 km triangle at Regionals
Pendleton – Merrickville – Alexandria
120 km triangle at Regionals
Pendleton – Winchester – Maxville
He finished 4th of 14 competitors
306 km triangle
Rockton – Granton – Varney

Colin logged a total of 144 hours and 5 minutes as of 1 June 1981, having less than 200 hours total gliding time at the beginning of the year! All flights were piloted in his own PIK-20D, C-GOPN.

Note from the editor:

Every pilot with less than 200 hours total time before the beginning of the gliding season can win this trophy! SAC is considering hand-capping the 200 Trophy — so get into your Grunau Baby and fly some kilometres. The new system will be applicable to your 1982 flights if approved. More news later.

BAIC TROPHY Dave Hennigar, Winnipeg 789 points

526 km triangle Pigeon Lake – Vita – Killarney
Dave flew his HP-14T

Runner up:
Tony Burton 509.4 km to Goal 636 points
John Firth 412.5 km O&R 619 points

CANADAIR TROPHY Tony Burton, Cu Nim 2463.7 points

402 km Indian Head, Sask to Roseile, Man.
He was on his way to the Regionals, landing 20 km short of Carman
509.4 km Distance to Goal
Indian Head, Sask – Medicine Hat A/P
He was returning from the Regionals
372 km of an 510 km triangle attempt
Cowley – Bow Island – Manyberries
landed at Judson, Alberta
327.5 km O&R Claresholm – Bow Island
331.7 km triangle
Claresholm – Bow Island – Taber

Tony flew his RS-15 C-GPUB (THE yellow butterfly for those who admired her elegance in the blue of the sky, or praised her for the excellent craftsmanship).

Runner up:
John Firth 1614.8 points
Colin Tootill 1350.8 points

RODEN TROPHY SOSA 275.83 points
Gordon Bruce, the strong fighter for MSC, was almost heart-broken to award "their" trophy to SOSA. It was a close race, and Colin Bantin accepted the award for SOSA.

Runner up:
Vancouver Soaring Assoc 269.96 points
Winnipeg Gliding Club 255.32 points

ELEMER BALINT MEMORIAL Ulli Werneburg

This Memorial Fund was donated to SAC by the Balint family. Interest accruing from this fund is awarded to the pilot who shows the best Canadian placing at World Championships. Ulli had placed 11th in Paderborn 1981, only 10 points short of being in the top 10! (see 4/81). Ulli expressed thanks to his Team Manager Al Schreiter, and his crew Bob Cairns (MSC) and Dave Collard (VSA).

Ian Oldaker, Chairman Instructors committee, now gave Gordon a rest from the heavy trophy exchanges to present the **INSTRUCTOR AWARD**:

"Many submissions had been received, names from big and small clubs, but by no means is this Trophy the prerogative of large clubs. This year's award goes to Len Douglas of Base Borden Soaring, a young instructor who had just attended the Eastern Instructors School; he showed much enthusiasm, flew the most flights in the back seat, gave an entire ground school course ..." So there is a chance for everyone!

Then followed the President's presentation of the **BALL AND CHAIN TROPHY** — (one of the most difficult criteria is that the recipient be

CERTIFICATES OF HONOUR

Certificates were presented by Gordon Bruce.

Jim Henry

"He is of a rare breed, not necessarily because of his Irish parentage, but because he seldom opens his mouth before he has carefully considered his words. If he is interrupted, he simply ceases to speak, for why waste words on those who do not wish to listen."

In 1973 Jim accepted the appointment to chairmanship of the Technical committee, which he passed on to George Adams this year. His tenure turned out to be an unusually busy time. In and about 1977, Transport Canada challenged the competence of SAC to continue to process and recommend the granting of Type Approvals for new sailplanes. They were becoming more sophisticated, using new materials and able to traverse longer distances at ever increasing speeds. Transport Canada was worried about granting these aircraft Type Approvals on the basis of SAC recommendations. Jim's diplomacy and unruffled demeanour prevailed throughout countless delays and vacillations until common sense and mutual respect resulted in the present improved procedure.

Maurice Laviolette

Notre ami Maurice a eu le plaisir de recevoir un Certificat d'Honneur de l'ACVV, pour sa contribution à révolution de notre sport et sa participation active au sein du CVVQ.

Il s'est joint au CVVQ au printemps de 1966, club au sein duquel il s'est attiré le respect de tous les membres, en tant que président pendant deux ans et aussi à titre d'ingénieur.

Autour des années 1970, quelques membres du club s'étaient rendus à Sugarbush, Vermont pour y effectuer des vols d'onde. Il n'en fallait pas plus à Maurice et quelques autres, pour essayer de trouver un endroit propice à l'onde, mais situé plus pros de Québec. Après quelques voyages dans la région du Mont Ste-Anne et de Charlevoix, et attiré par les lenticulaires qui survolaient Baie St-Paul, quelques tentatives y furent effectuées. Ces tentatives s'étant révélées prometteuses, Maurice entreprit les démarches auprès du Ministère des Transports afin d'obtenir un bloc d'espace aérien, ou les gains d'altitude seraient possible tout en respectant les règlements de l'air. Ce ne fut pas sans difficultés, mais un bloc d'espace aérien fut réservé aux véliplanes, et l'exploration de la région devint plus systématique. Finalement le 13 septembre 1981 tous les travaux, essais et démarches furent couronnés de succès — il s'est monté au-dessus de 20,000 pieds résultant en diamant (voir aussi 2/82 Baie St-Paul High). (Denis Gauvin)

Maurice Laviolette, Québec Soaring Club, was awarded with a Certificate of Honour for his perseverance in obtaining an airspace reservation for wave soaring at Baie St-Paul.

Dave Belchamber

Dave had taken over a job two years ago unaware of an upcoming explosion of badge claims. Processing of claims quickly doubled, every issue of *free flight* since 1981 has published an ever-lengthening list of badge legs and completed badges from "C" to Diamond badges, complete with type of sailplane and location of flight. □

DIRECTOR'S MEETING

As I write these lines, 11 pm 6 April, there is still snow everywhere and record lows to my soaring outlook — the TV weatherman just said that two hours ago — 9 pm — it was +5 in Inuvik! When will spring and dry ground come? ...

The past AGM Directors Meeting consists in general of organizing for the coming season, and of making sure the "job jar" is divided up and seeing who can be found to fill vacant jobs.

- Three committees remain vacant, and it is hoped that able volunteers may come forward. They are the committees of Financial Planning, Provincial Associations, and Membership. If you feel you can contribute in one of these areas and wish to know more about it, contact the National Office.
- George Dunbar of Cu Nim accepted the Trophies and Statistics chairmanship and has committed himself to recommending changes which will encourage increased trophies competition. My thanks to George for taking on his job.
- Andy Gough of SOSA will be studying the Official Observer program, which is in need of tightening up.
- Karl Doetsch is stepping down as a member of the Board and as Past President, which is a one year term. He has agreed to carry on as Secretary-Treasurer to provide very important continuity to this position.
- A new gliding club in Chicoutimi, Quebec is being formed, the Club de Vol à Voile du Saguenay, and it has applied for SAC membership.
- 1983 AGM. The next AGM will be held in Calgary, and hosted by Cu Nim. It will be the first time the AGM will be held that far West.

Tony Burton

AGM WORKSHOPS

In keeping with the format of recent AGMs, a series of workshops on Sunday morning provided a forum for the sharing of thoughts and some lively discussion.

Jim Carpenter led the first workshop on National Competition Reorganization by asking for comments on a proposal submitted by the Sporting committee. The opinions came faster than expected from the competition pilots present. A vote taken during the session indicated a strong desire to maintain one large National competition rather than holding separate Class competitions. Subsequent votes concerning the holding of Nationals yearly

continued on page 11



Karl Doetsch

Terry Beasley

married). Russ Flint dared change the register of well-known and famous gentlemen listed since 1951. It was awarded to your editor for the many long hours in developing *free flight*. Her soaring achievements were limited to a 92 km XC: a very sunny, very high 4/2 hour flight — joyful and without haste or deadlines.

Now was the time for **SPECIAL RECOGNITION AWARDS**. They were engraved Silver Trays for outstanding services to SAC.

Terry Beasley (presented by Karl Doetsch). Terry had been SAC Director for 20 years, served four terms as President and was greatly involved in technical dealings with Transport Canada, the Sporting committee, and the Technical committee. He is a flight test engineer at Canadair, and is presently stationed in Yuma, Arizona.

Al Schreiter (presented by Jim Carpenter, World Contest Team Pilot)

Jim offered gratitude to Al Schreiter for his job as World Contest Team Manager. "What would you say if you had to work extremely hard across continents six months ahead of your summer holiday, looking for car reservations, accommodation, be tour guide, run after sailplanes for the pilots, learning languages; and when all is over you normally get only a little thanks for the efforts. Such is the job of the World Contest Team Manager."

Terry Tucker (presented by Russ Flint)

Most of you know Terry as the SAC OFFICE for the last 15 years; (she was the first employee of SAC, supposedly part-time, but available 24 hours). With the development and growth of the organization Terry was soon needed full time and 24 hours "officially". Terry was always there for us, and an adviser to the directors and chairmen. She knew just about everything that was not written down from the early SAC days, and was a real mother to us. Many of us regret her resignation last year. When the President presented her with the Silver Tray, she got a long lasting ovation — a simple treat to her from us, the best we could do on the spur of the moment. Thank you, Terry.

\$50!!!

never get my passenger rating! Anyway, two weeks earlier I took Gord up for HIS FIRST GLIDER FLIGHT and as MY FIRST PASSENGER and he thought it was great. Today would be his sixth flight. I was so happy that he was getting interested, and the rest of my pilot colleagues were likewise. It is not often that both spouses become interested in gliding, as most pilots will confirm.

The flight with my daughter's friend was for about 30 minutes. I gave the usual introduction and running commentary as we were towed up to the 2500 agl (2800 asl) release height. I showed him how we always watched for likely looking "landing" fields, just in case! I also made some comment about my never intending to land out — ever!

Finally about 4 pm Gord and I took off in one of the 2-33s for a "routine" flight. There seemed to be a great deal of good lift as we climbed, at one point the variometer showing 900 fpm. I felt we were still too low and a bit far from home to release. We did not seem to be going through much sink which was encouraging, although there seemed to be a lessening of the cu in our vicinity. At 2800 feet we released and circled in what started out to be lift — but instead of climbing that last 100 feet on release we started going down at 400 fpm. I looked towards home base and could not believe that we were so far away. With all the false assurance that indicated good lift gives I had not realized that we were much further from home than usual.

"Ah, there is some zero sink. Maybe I can stay in this and let the wind drift us closer to home!"

The winds that seemed so definite on the ground were not having much visible effect on us and we were now at 2400 and holding. Then we hit more sink (800 fpm this time) and we were at 1900 feet... and way out! Silence was coming from the front seat.

Quietly I said, "We are not going to make it back. Let's look for a place to land. We are over acres of bush but I'm sure that the doctor's airstrip is just north of here along this concession road below us."

Gord and I had looked at this strip every time we were up but unfortunately this time we were at a much lower angle and it was hidden by trees. However, I looked along the road towards the end of the trees for a suitable field and there seemed to be several possibilities — IF we could get that far, for it was slightly upwind.

The date was 22 July, and corn (a common crop in the Rideau Valley area) while not "as high as an elephant's eye", was at a dangerous height for landing a glider safely. Every field that I considered or that Gord pointed out I had to discard for one reason or another — except for one. It was long and fairly wide, going east-west, beside the north-south running road. The power lines were on the opposite side of the road, and there was a gate right beside the road! It had been plowed for corn but something had happened after sowing because there were very few spindly, short corn stalks sprinkled throughout the field. I decided to run diagonally across the field to be directly into the wind that was out of the northwest. This would also bring me as close as possible to the gate.

Anything to make my rescuers a little happier! My decision made, I observed the field in detail as we drew closer and I prepared to enter the circuit. It went exactly as I had planned and I blessed my instructors (again) for the insistence that I learn my circuit heights by gauging angles to the point of touchdown, rather than by landmarks on a familiar field. On final, things were going so well and because the plow marks were rougher than I had anticipated, I speeded up a little to keep flying diagonally across the plowed furrows. I wanted to get as close to the gate as possible without damage to the glider. I finally had to flare because a small knoll was showing itself and I was drawing close to the bordering fences. I even balanced the wings until the end of the run-out and then dropped the upwind wing, a touch of finesse that I am not always successful with on the airfield. When we climbed out and examined the aircraft and realized that there was not a scratch, and that we had only damaged about fifty corn stalks, I actually felt elated. I would have other thoughts later such as, was I really incompetent and just lucky, and was all that teasing about an old woman of fifty learning to fly really true?

One and a half hours after my call from a nearby farmer's phone, the gang from the club arrived with the trailer for the de-rigging. They were full of concern and questions, but not as to "why" so much as "how did you cope?" The President of the club, Glenn Lockhard, took the opportunity that evening to give a clinic on the dismantling and rigging of a 2-33, so the "incident" was not a complete loss. Also, as we expected, our arrival back at the field was a time for good-natured ribbing. There was some concern for Gord's feelings regarding gliding now, and there was a sigh of relief when he stated that he was quite relaxed throughout the whole affair. "So relaxed" he quipped "that I have to change my shorts". He also stated that he intended to go up again as soon as possible.

Incidentally, we returned to the club with two dozen corn from the owner of the infamous field. He saw an opportunity to make a little cash of a failure of a crop and suggested I should pay \$50 for "landing rights". After a little discussion, keeping in mind the admonition to keep good relations with the locals, Gord and I persuaded him that \$20 would be more appropriate as there was no damage. As well as that he insisted we take home a couple dozen of his "real sweet corn".

Later that evening the two five-hour pilots and the land-out pilot gave the stories of our experiences at the weekly ground school.

On looking back and trying to analyze the reasons for my land-out, there is no doubt that poor judgement on my part for the release point being so far from home base was the prime factor. However, from that point on, the training and practice that I had been given by great instructors paid off. What could have been an "accident" became an "incident" and fellow pilots figure now that "if Eileen can do it safely then so can they."

At the end of the summer when Gord and I were transferred to Vancouver, the party cake from the club was shaped like a field with corn on it and a glider in the middle! Also, there was the warning that there would be no corn fields at Hope. To my new fellow club members at VSA: relax, I have learned a lesson. □



The author joined RVSS in May 1979. The first year was slow going, but she soloed before her fiftieth birthday. She got her licence in 1981 and soon after an endorsement to carry passengers. This new challenge was well received by her husband Gord. They moved last year to Vancouver and joined VSA. Here she is facing a new challenge — mountains and Blaniks. But for Eileen there is no such thing as too big an obstacle to master.

Eileen Tomalty
Vancouver Soaring Association

It was a boomer of a day! I could see that from downtown Ottawa where I was doing much needed grocery shopping for my family of five. I would have so much rather been soaring! Could I get out to the field in time for some lift? I finally arrived at the club's field (Rideau Valley Soaring School) Kars, Ontario about 3 pm to find that there were two pilots who had taken off hours earlier (a Lark and a 1 -26) and were now well on their way to their five-hour badge.

"Obviously", I thought, "there is not too much sink!" I had made plans with my daughter's friend and my husband to meet them at the field to give each a flight. My daughter was another matter. She is frightened of heights and odd sensations of movement and "to fly in something without a motor ... with mother as the pilot" was next to insanity as far as this nineteen year-old was concerned. My husband, Gord, also had not been interested in gliding until recently. This was my third season flying gliders and, up to a couple of weeks earlier when I had got my permission to carry passengers, he had only been to the field two or three times. His excuse was that he would wait for me to take him up the first time. I really think he thought (or hoped) that I would

SIERRA ALPHA

... a lady collects a record ...

Brenda Histed
Montreal Soaring Council

An empty slot in the Canadian record book was filled last July when a 315 km Goal and Return distance was flown by Brenda Histed, Montreal Soaring Council. At 22, Brenda has been gliding for four years, and at the time of her flight had accumulated more than 200 hours of P1 time and an instructor's ticket. In the winter months, when she's grounded Brenda studies medicine in Ottawa.

Hawkesbury, Ontario — a Tuesday evening in late July: a cold front was going through and near record lows were predicted for the night. It seemed that the next day would be the one I'd been waiting for.

I awoke in the morning after a restless sleep. There was a feeling in the atmosphere — one I've known before on good soaring days. It may just be the dry, cool, crisp air. But to me it's more. The air seems charged, it instills a thrilling sense of anticipation, the certain knowledge that a great day lies ahead.

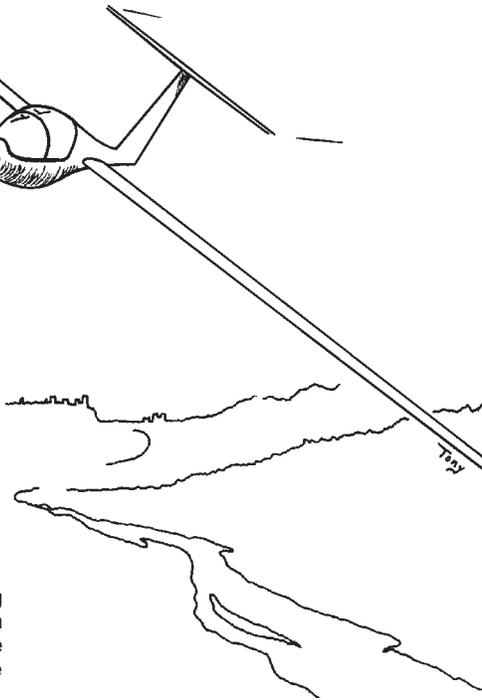
At 0800, I was greeted at the hangar by Geoff Alcock, a cheery fellow-club-member, who would also be flying cross-country that day. I would be flying my favourite glider, a ten-year old LS-1, C-FLSA.

There was a northwesterly breeze on this promising morning, and by 1030 cu were stretching north of a line reaching from the mountains toward the St. Lawrence River. I declared as my turnpoint the dam at Portage-du-Fort, 158 km west up the Ottawa River.

Local wisdom has it that take-off for a 300 km attempt must be before 1130. I was in the air by 1127. Releasing at 2900 feet, I made one turn in lift, then turned west. As I had hoped, the lift was already dependable and I could head out on course without fear of an early outlanding. I clocked a couple of thermals at 500 fpm.

At Alfred, 20 km out, I encountered the first blue hole. I flew south along the edge. Minutes passed. The Ottawa Control Zone lay ahead. How could I get north of it? A quarter of an hour later, a cloud street heading northwest lay ahead of me. Using its lift, I crossed the Ottawa River.

And so I was on my way. But blue holes seemed to be the order of the day. I was con-



stantly crossing them, losing 1500-2000 feet, or taking detours around them. I generally worked a band between 3500 and 5500 feet, rarely reaching cloud base, as the lift would decrease about 500 feet below the bases. As I entered each thermal, I was already anxious to leave it. I worried that conditions might be deteriorating to the west. "Time is of the essence", I kept saying to myself, "press on".

Along the way, there were pleasant surprises. I spotted landmarks that I'd missed on two previous attempts along this route. Airports, once unknown to me but certainly known to the mapmakers, appeared. This added to the sense of discovery, which to me is such an important part of cross-country flying.

But there was work to do. The last 10 km to my turnpoint were a struggle. And Portage-du-Fort itself offered no strong or consistent thermals. Eventually though, I had three pictures and turned homeward. Once I had regained a comfortable altitude, I radioed ahead to Geoff, who had been flying near Arnprior, with the good news that I was on my way back. Once past Arnprior, I made a long glide to the east and worried once again about crossing the river to skirt north of the Ottawa Control Zone. But the river itself offered help. "Thanks", a cloud appeared ahead of me right on course.

Over Aylmer, a small town on the Ottawa River 85 km from home, I was climbing in a good thermal and turned to suddenly be confronted with a huge aircraft, very close and at my altitude. Fortunately, it was the side, not the nose, and I knew I was safe. Somewhat shaken, I became far more watchful.

The radio suddenly crackled to life, "... any glider traffic in the area ..." Uh oh. Was I in trouble and would SA and I be routed north around the Ottawa Control into the blue, even though I was above the zone's 4000 foot ceiling? But my fears were soon dispelled when I received a briefing on local traffic. They could see me on the radar and a very friendly controller soon told me they had diverted a DC9 away from me.

Whew! "Lima Sierra Alpha", he would call me periodically, giving me reports and asking for my altitude. "Roger, Sierra Alpha", he'd say. That sounds pretty, I mused, thinking of the fanciful flights of John Joss' "Sierra Sierra". Over Orleans he told me I was clear of their area and that he would be leaving my frequency. I thanked him and told him of my task and that I might just make it home. He wished me luck, said he hoped that I made it, and went off the air.

Some 6000 feet over Orleans, 75 km from home, I began wondering when I would be able to start my final glide. I was tired of circling, my wrist ached terribly, and I was so cold that at times my teeth chattered and I shivered uncontrollably. With the sun behind me, my arms were shaded and often covered with goose bumps as the draught blew in through a vent that wouldn't close.

But the glide had to wait. I flew along the river, getting lower and lower. Even a paper mill at Thurso had little to offer. Geoff radioed from ahead that he had had the same problem. "But have faith", he said. No sooner had he said this than my variometer moved to '2' up. I worked it, thinking of that longed-for final glide. Crossing the river, I saw Pendleton airport. It was a relief. But I still wasn't high enough, and my vario had been reading a steady '3' down for a long time. Geoff called from home. Again he encouraged me. "You'll find something." Once again, it was no sooner said than done, as I banked in a '2' up thermal.

The next time Geoff called, I was at 3500 feet and even closer to home, at Alfred. "I guess I've got it", I said, denying to myself the excitement I should have felt. A mile out, I was able to add enough speed to do a modified beat-up at 800 feet over the field.

As I began the circuit, I suddenly became aware of how very tired I was. The "T" seemed slightly blurred. "I hope I can land this thing safely now", I said to myself as I carefully went through my landing checks. "Don't relax just because you're not landing in a farmer's field."

I landed at 1735. But as the sailplane rolled to a stop and I clicked off the radio and master switch, unbuckled my straps and removed the canopy, I wasn't elated. I didn't jump into the air or whoop as I thought I might. Perhaps I felt it was too good to be true.

This flight was different from any other I had ever made. There was no effortless and care-free soaring to great height. My elation crept up gradually. I began to feel the magnitude of the challenge, of the 6 hours 8 minutes of relentless pushing on, the ceaseless demand for concentration and the need to perform continuously at peak. It was a voyage of discovery, ending in a Diamond and a Canadian Record and memories of a very special flight. □

Centre of Gravity Position and Performance

Frank Irving

reprinted from *Sailplane & Gliding*

In pursuit of the maximum performance, pilots wish to minimize the effects of the additional induced drag which arises as a consequence of the tail lift force.

The lift force generated by the tail produces some extra induced drag, since the tail is simply a small wing. It is common to suppose that down-loads are more unfavourable than up-loads, on the argument that up-loads relieve the wing lift, whereas down-loads increase it. On this basis, pilots have tended to think in terms of reducing the down-load on the tail at high speeds by ballasting the machine to get the C of G to the aft limit, or perhaps even imprudently further aft.

A good starting point for analysis is the splendid article in SOARING for October 1979 by Robert Jones. It turns out that if the tail is producing a lift force then, for the same total (wing plus tail) lift, the induced drag is always greater than with zero tail lift, and moreover, the direction of the tail lift is of no consequence. Upward tail lift is just as undesirable as downward tail lift. If we consider a Standard Class sailplane for the sake of simplicity, then there could be a small up-load on the tail in slow circling flight and an appreciable down-load in fast straight flight. Both will produce an increment in the induced drag. The percent drag increment may well be greater at the higher speed but, since the induced drag is then a smaller proportion of the total drag, the actual drag increment could well be smaller than at low speed. But what really interests the pilot is the loss of energy due to the induced drag increments: in effect, how much further he has to climb in the course of a flight to make good the energy loss.

These calculations have been carried out for a "typical" Standard Class sailplane for which it was assumed that, when circling in thermals, the speed was 47 knots and the angle of bank 35°, giving a load factor of 1.22. For a gliding speed of 80 knots the results are as follows:

Loss of energy height/hour (metres)

C of G	Circling	Gliding	Total
0.25	3.36	51.95	55.31
0.30	0.07	36.49	36.56
0.35	1.67	23.75	25.42
0.40	8.15	13.74	21.89
0.45	19.52	6.45	25.97
0.50	35.77	1.88	37.65

The C of G position is given in multiples of the mean aerodynamic chord (MAC).

It will be seen that when the C of G is well forward, the energy loss in the straight glide is predominant whilst, when the C of G is far aft, the energy loss in circling flight is the greater component.

Similar values for the total loss of energy height per hour for various gliding speeds are plotted in Fig. 1. Each curve has a minimum and, the higher the speed during the glides, the further aft is the optimum C of G position, as one would expect. But the significant feature of the results is that they show that there is no point in getting the C of G aft of 0.4 of the MAC for speeds up to 80 knots corresponding to an average rate of climb of a little over 4-1/2 knots for this sailplane. If the C of G were fixed at about 0.37 of the MAC, the loss of energy height per hour would be within a few feet of the minimum for any of the conditions considered here. The quoted figures for loss of energy height per hour will only apply if the flight takes place near sea level but the conclusions on optimum C of G positions are unaffected by the mean altitude.

When the sailplane has flaps, the calculations become a little more complicated because of the different flap settings when circling and gliding. The effect of the flaps is to reduce the tail loads during the glide, and hence the overall energy loss. Indeed, with the C of G at 0.4 of the MAC and with a glide speed of 60 knots the minimum loss of energy is quite negligible since, as it happens, the tail loads in both conditions of flight are very small. For this machine, the optimum C of G position moves forward as the glide speed increases, due to the differing flap deflections at the various gliding speeds. Once again, the most aft optimum C of G position is about 0.4 of the MAC and if it were fixed at 0.37 of the MAC, the departure from optimum would be negligible.

The most important conclusion which emerges from these calculations is that, in the case of the Standard Class sailplane, the optimum C of G position is reasonably well aft but by no means extremely so. Very aft C of G positions lead to an excessive loss of energy due to the up-load on the tail in circling flight. In the case of the flapped 15 Metre machine, the effect of the flaps is to alter the tail loads in the favourable sense. The energy loss is generally very small indeed and can be almost zero. There is no point in flying with excessively aft of C of G positions.

We conclude that the optimum centre of gravity position, to minimize the mean rate of loss of energy arising from the additional induced

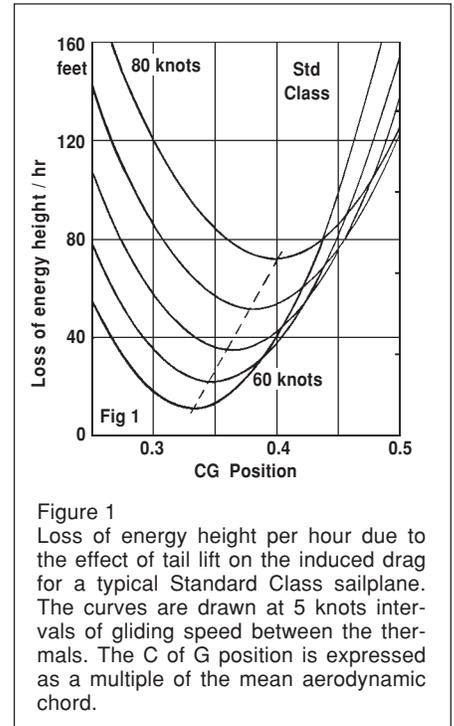


Figure 1
Loss of energy height per hour due to the effect of tail lift on the induced drag for a typical Standard Class sailplane. The curves are drawn at 5 knots intervals of gliding speed between the thermals. The C of G position is expressed as a multiple of the mean aerodynamic chord.

drag caused by tail lift forces, is a function of the gliding speed between thermals (or of the corresponding rate of climb in the thermals). However, if typical Standard and 15 Metre sailplanes are considered it is found that a single C of G position will provide near-optimum conditions over a reasonable range of gliding speeds. The optimum C of G position, in the cases considered, was somewhat forward of the likely aft limit which, for the machines considered, would be at about 0.40 or 0.42 of the MAC. Detailed calculations for an Open Class sailplane have not been made but the results are likely to be much the same as for the 15 Metre.

Some rough calculations for a sailplane with a T-tail suggest that the additional induced drag in circling flight is likely to be more, and that in straight flight less, respectively, than the values found by the above calculations. The optimum C of G position is therefore likely to be further forward than suggested above.

A fuller version of this paper with details of the calculations and the characteristics of the "typical" sailplane was presented to the XVII OSTIV Congress held in Paderborn, May 27, June 6, 1981. It will be printed in *aero revue* and OSTIV Publication XVI. □

LINES

ABOUT

LINES

Bob Carlson
SOSA

ROPE That yellow streak that connects you to the tug is common but necessary. You have thought and practised rope break technique. So have I. Despite its crucial function we accept rope as commonplace.

Ancient stuff rope Our hairy ancestors used vines, then discovered, in ways we know not, that grass and later the fibre from certain leaves could be twisted to form a strand or cord to hold on an axehead, hold up skin clothing, or hang next day's side of meat.

Traditionally, rope was made of either hemp, manila, sisal or cotton. Use of these fibres is declining rapidly as man-made fibres gain prominence. The three man-made fibres in use, in order of volume, are polypropylene, nylon and polyester. Why man-made over natural? Basically because of performance. The finished properties are not only better but more reliable. The properties of these ropes are shown in the table below.

Except when low elongation is required, nylon has the best value in use. However, economics, such as frequent loss from towplane, can make polypropylene a preferred material. In the chronically depressed fishing industry, the low initial cost of polypropylene makes it attractive simply because the fisherman only has so many dollars to spend for a needed length of rope. It is this brutal economic fact that keeps manila in use today. Tradition helps

too as does ignorance. There are still many people who do not like or trust these new-fangled materials.

Selection of cordage for an application is a compromise between properties and cost. So what makes the best tow rope? Since we all like silky smooth tows despite the antics of thermals or towpilots (who is for 80 knots over the fence?) to thrash us about, shock absorbency is of real interest. Aircraft structures have stress limitations. Cost is a very real factor, initially and for replacement. Spliceability is needed as is ease of handling. A 6 mm diameter braided nylon line handles easily and gives a very soft tow; however, it is expensive, splicing techniques are not widely known, and ironically it is too strong. Strength levels compatible with aircraft structures would result in small lines (5 mm diameter), a size difficult to handle and nearly impossible to splice. Polyester is out because of cost and low elongation. Polypropylene is cheaper, is harder riding in relation to nylon but has a size/elongation/breaking strength combination that is compatible with aircraft structures. Polypropylene's greatest disadvantages are poor sunlight resistance (not a real factor as long as lines are lost frequently) and shock absorbency. Polypropylene will fail at quite low stress levels if shocks are frequent and hard enough. It should be noted that the Canadian Coast Guard Service forbids the use of polypropylene cordage in all life-saving apparatus where the cordage is exposed directly to sunlight while stored ready for use.

Before we complete our selection, let us look at the little considered aspect of reliability. Traditionally, cordage was always used with a safety factor of at least 5. For example, if you wanted to lift 100 lbs, you made sure your line had a breaking strength of at least 500 lbs. Man-made fibres have a capability that natural fibres do not, they can store large amounts of energy. If a line breaks, this energy is released with disastrous results. Thus man-made lines are often used with safety factors of 9 or 10. Note that no rope is perfectly elastic. It should never be stressed above 80% of its ultimate loading capability since permanent deformation will occur, and subsequent stress can lead to failure at very low load levels. Another fudge is that manufacturers of cordage derate the performance of their cordage to minimize liability claims if failure occurs.

What then makes the best tow rope? A nylon line with a close tolerance shear pin assembly. Next best, if economics are a factor, a polypropylene line with close tolerance shear pin assembly.

What makes the best tie-down line? It depends where you want the lift and gust loads to be absorbed. If you want the aircraft to absorb all the loads use heavy steel chain. If you want the tie-down to absorb the load use nylon, at a proper safety factor load. DO NOT USE MANILA. A broken bird will probably result. Natural fibres or polypropylene should not be used in continuous outdoor exposure. Rot and ultraviolet light degradation are insidious. Failure can and has occurred without warning. Depending on size, nylon should be replaced every two years at least, small lines every year if outside all year. Watch air pollution, it can be worse than sunlight. Polyester can be a compromise if you want the aircraft structure to absorb part of the load, and the tie-down the rest. Be sure that the anchor can absorb and transmit the load to the ground. Good rope selection is useless if the tie-down does not hold. Also watch angles of tie-down. Straight down and short has minimum elasticity, maximum up-load on the anchor. A long sloping tie-down can have lots of elasticity, minimum up-load and maximum side load on the anchor. Snug, short lines, lift dumping attachments, positioning of the wing, and a sheltered location is best. Of course, the very best is a dry hangar or trailer. Cover or aircraft tie-down on a trailer are best made of polyester or nylon, because of maximum sunlight resistance with moderate elasticity/shock absorbance. Shock cord sheathed with nylon can be a good alternative. The best tarpaulins (and the most expensive) are Hypalon or Neoprene coated nylon, Urethane coated nylon is next.

Tying knots and splicing cordage are always subjects of great fascination, particularly now that macrame is fashionable. Knots are dangerous as they usually result in a loss of 50% of the useable strength of the line. Some knots can yield at 80% of straight line strength. A good splice can give 95% of the straight line strength. All can slip if not properly done. Remember that man-made fibres are usually more slippery than natural. Consequently more care is needed in setting a knot, bend or hitch. At least two extra tucks are necessary for a good short splice in laid rope. Splices are preferred to knots, and should be used where possible.

Tow ropes should be carefully inspected daily before being put into use. Do not hesitate to reject a line with a knot in it (return to use after removal). A broken or partially damaged strand requires instant rejection and repair. Laid rope performance relies on symmetrical load application and absorption. Failure of one strand leads to an asymmetric load and rapid failure. Sunlight is an enemy of rope. When not in use, store out of light. Coil rope clockwise unless it is left hand laid. Battery acid is destructive to rope of all kinds (polypropylene and polyester least). Rust in contact with fibre is an insidious destroyer of cordage of all kinds. Keep tow lines, tie-downs and lashings clean and protected — they will return good service.

The application and selection of cordage to a use is no different than that of any other material. Seek the assistance and guidance of the manufacturers. They will be glad to assist. □

	Polypropylene	Nylon	Polyester
Cost/lb Strength	low	medium	medium
Elongation	low	high	low
Rot resistance	high	high	high
Colour	usually yellow (but all colours made)	white (rarely coloured)	white/grey (rarely coloured)
Abrasion resistance (wet or dry)	low	high	medium
Sunlight resistance	good till antioxidant used up, then catastrophic	gradual loss	gradual loss
Buoyancy	floats	sinks	sinks
Shock absorbency	very low	high	medium

AN UNUSUAL WAVE SYSTEM

John Firth

Excerpts from the 17th OSTIV paper presented at Paderborn in 1981.

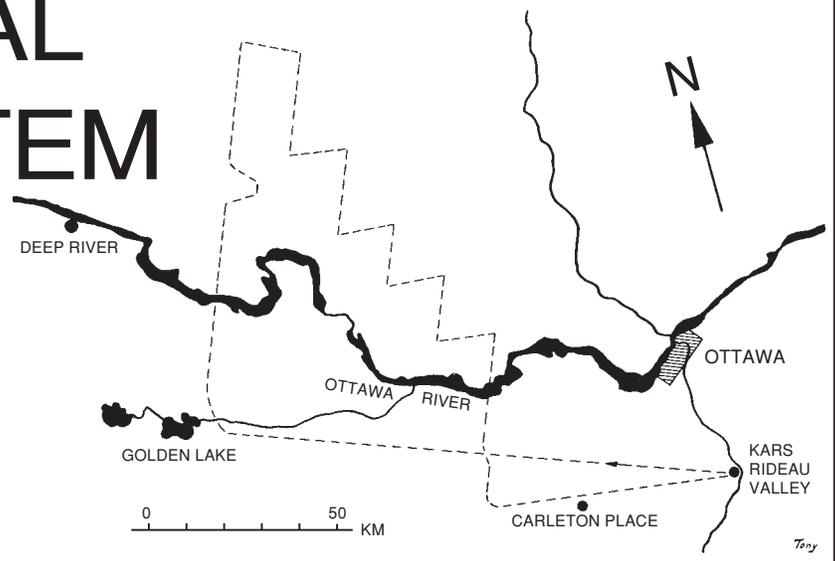
10 May 1980 promised to be a typical good spring soaring day in Eastern Canada. Early morning cumulus with base about 4500 feet in a moderate westerly wind prompted me to declare a 350 km Goal and Return — Kars to Deep River and back (Fig. 1).

As the day progressed, extensive cloud streets gave lift of 4 to 6 knots, and the flight upwind became a straight forward proposition with 100 to 120 km/h achieved until, at 1500 EST and 140 km away, the streets broke up rather suddenly and I found myself at 2500 feet agl searching for a reasonable thermal. The clouds had reorganized across wind and their appearance suggested wave activity. After two failures to connect with thermals in the usual position under good looking clouds, I searched further upwind and was relieved to hit good lift at 1500 feet which carried me back to the 7000 foot cloud base. Now convinced that there was an overlying wave system, I moved slowly north across wind in zero sink, still at the 7000 foot level, looking for a connection into the waves. Though there were large areas of smooth, but very weak lift, none persisted long enough for a climb above 7500 feet. To the NW, solid overcast suggested increasing humidity; at Deep River, 50 km upwind, the local club had hardly any sunshine that day.

Using bands of zero sink, I was able to move north of the local airway, in anticipation of success. To the east, the cumulus cloud rolls had the smooth lenticular appearance characteristic of wave activity, so I set off towards them, and sampled two clouds without success. By now I was down below 4000 feet. Finally a 4 knot thermal lifted me to the base of the cloud, weakening to 1 knot as it rose into the centre of the next roll cloud. Under a normal cumulus, close to base, the lift usually improves. A move upwind in zero sink produced a slow climb; half a knot improved to 1, then 2 knots, and carried me slowly up through a wave window till I was at 12,000 feet, above cloud tops while drifting to the east at about 10 knots.

Well over an hour had gone by since initial contact, and the increasing moisture filled in the wave windows. So I set off north along the wave until it weakened, and then turned downwind, finding open windows again as expected, with successive waves easy to locate and use, the best lift being 4 knots.

This was totally unexpected and a NOVEL SITUATION; a sea of waves extended north and south as far as could be seen from 16,000 feet, which was as high as I wanted to go — being dressed only for thermal flying! To the



SW, far away, a solitary lenticular, much higher, showed wave persisting possibly as high as 25,000 feet. Wavelength estimated by flying downwind at 60 knots and adding 20 knots (10 m/s) for wind, gave about 8 km spacing. The next two hours were spent confirming the widespread usability of the wave system. Navigation was tricky, with 70% of the ground obscured, but lift was always predictable and easy to follow. Feeling chilled and tired I descended crosswind, towards home, 100 km away. The Kestrel carried me at up to 100 knots along the wave fronts, in zero sink. The edge of the cloud-marked waves was now at Carleton Place, about 70 km downwind of the first encounter, and weak waves persisted for several wave lengths in clear air below 10,000 feet. A fast run home to Kars, Rideau Valley A/P took only a few minutes; I was told thermal soaring at the site had ceased more than an hour earlier.

WHAT HAD CAUSED THESE WAVES?

“Ah”, you say, “merely a case of ‘thermal waves overlying cloud streets!’” Not so.

Take a look at the synoptic chart and winds aloft (Fig 2). The isobars show a situation well known for the occurrence of lee waves; a complex low centred 1000 km to the north was complemented by a high over the east coast of USA. Though low level winds (Fig. 3) were moderate, winds above 600 mb increased steadily, while the wind direction throughout the major layer varied only from 270 to 290 degrees. Hence the synoptic situation favoured formation of high level waves. However, there was no strongly stable layer overlying the convection, which in any case, was unusually deep for a lee wave formation; nor was there a pronounced change in wind direction above the clouds. The wave system extended perhaps 150 km from north to south, and was not stationary over the ground. This alone seemed to suggest that the wave system was not of topographic origin; though wooded hills rise to 500 metre in places, no isolated ridges exist in a suitable orientation for westerly winds.

On several occasions, I have encountered thermal wave overlying a well-established cloud

street, but in those cases the wind above the convection was at a large angle to the streets. In this case, well defined cloud streets parallel to the wind existed before the wave system was encountered, but broke up during the transition into the wave system. The high level lenticular suggests that the waves persisted well above 20,000 feet in some locations, and possibly up to the tropopause.

Pilots should always be on the lookout for waves coupled to thermals, whenever there is pronounced streeting. Transition into the waves is often difficult and requires a strong thermal coinciding with a favourable wave, but once accomplished, the extended flight can be a great reward for hard work! □

COMMENTS ON THE TEPHIGRAM

The radiosonde ascent shown was taken at Maniwaki, about 50 km NE of the flight zone; some of the features may be important in the formation of these waves. By 2000 hours thermal activity had ceased, and hence the first 3000 feet is dry and slightly stable. There follows a 4000 foot layer with dry adiabatic lapse rate up to cloud base, left from the daytime convective activity. Then a feature which may be significant: from 7000 to 12,000 feet, a saturated layer (temperature and dew point) is slightly stable, showing that this cloud layer is not a convective cumulus, but probably a lenticular! Above 12,000 feet the air again becomes dry but extremely stable, thus promoting propagation of the wave action up to high levels. The most striking, and I think important, feature of the data are the very low rates of both vertical and horizontal shear. The nearly constant wind direction ensures that wave energy will not be dissipated in turbulent shear. Readers' comments as letters to *tree flight* would be interesting.

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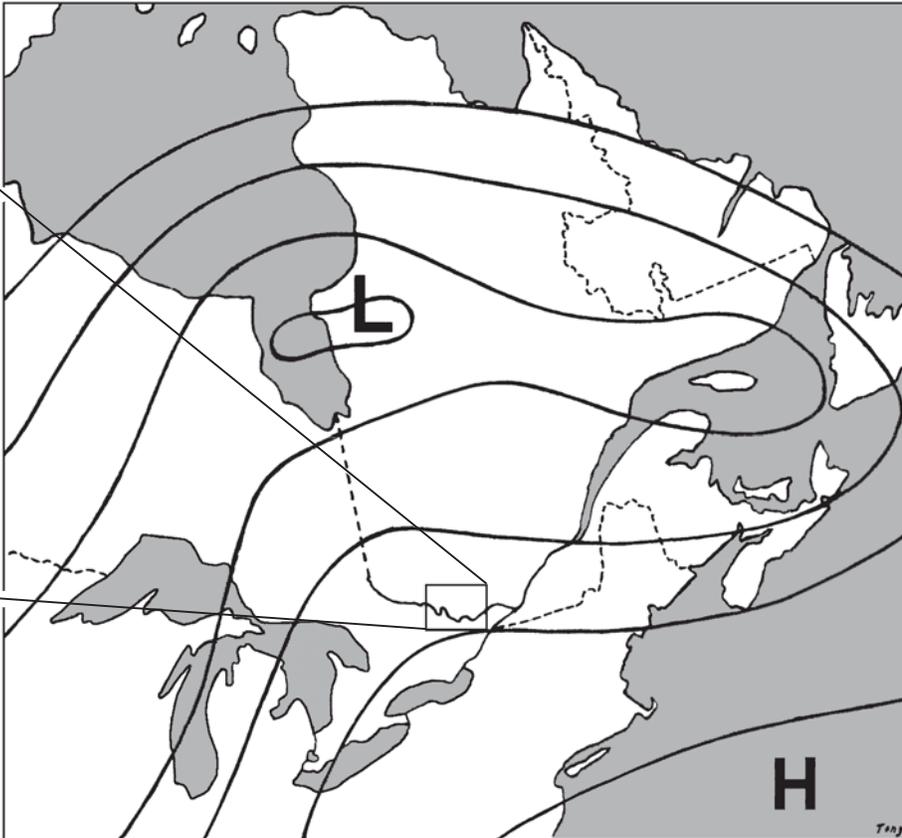


Figure 2. SYNOPTIC CHART 1400 EDST 10 MAY 1980

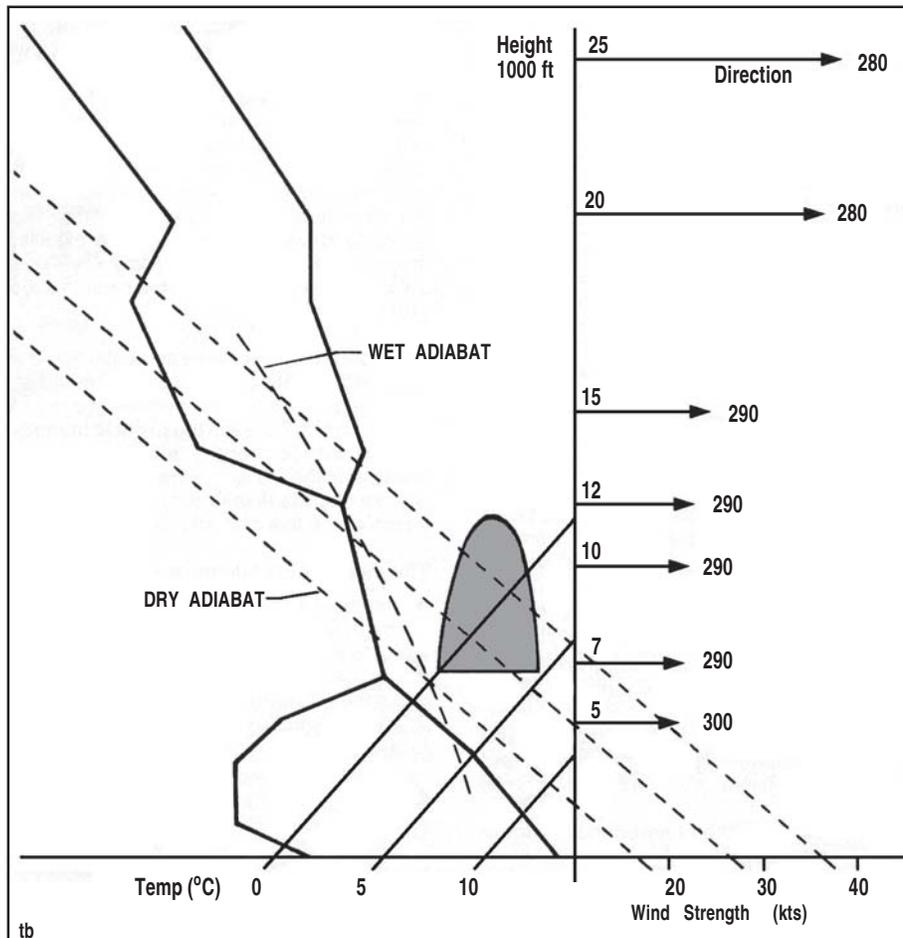


Figure 3. MANIWAKI TEPHIGRAM 10 MAY 1980

and the use of a point system for World team selection were indecisive. It was clear that additional pilot input is needed to thrash through the issue at hand. Given the limited number of clubs with adequate facilities for large competitions, ever increasing travel expenses and poor attendance at the Western Regionals, the Sporting committee is attempting to foster greater grassroots participation in competition, provide high quality competition to train team members and establish equitable methods for team selection.

The new chairman of the Publicity committee, Dave Puckrin, sought suggestions on how the committee could best serve the needs of the member clubs. From the ensuing discussion there appears to be general agreement that it is not difficult to attract new people into the sport. The challenge lies in how to attract people in easily manageable chunks or in a steady stream so as not to overburden the club resources and alienate existing members. The high attrition rates common in our clubs may be decreased if publicity places more emphasis on the individual's involvement in the club. Instructor load could be decreased if clubs sought licensed Air Cadets or power pilots. Some of the Publicity committee's goals will be directed at providing inexpensive material and information that clubs can use for attracting new members and increasing the public's awareness of our sport. However, the major goal for the committee is the establishment of a commercially viable calendar. Dave's expertise in the visual arts was evident during the presentation of potential formats for the 1983 calendar.

The workshops concluded with a question and answer period directed by George Adams, the new chairman of the Technical committee. Due to the nature of the committee's work and the sensitivity of pilots to any rumblings from Transport Canada, specific details of the committee's activities are being left to a report to be featured in *free flight*. From the information provided by George, the committee has been very busy with several Type Approvals of new aircraft (eg. Ventus) and variations on aircraft which necessitate additional Type Approvals (eg. Twin Astir with fixed gear). George also cautioned those present not to import new aircraft into the country unless they have been Type Approved. The warning also extends to aircraft being built in several countries as is the case with the French built ASW-20F even though the ASW-20s built in Germany have been approved.

With the effort put into hosting a SAC AGM and providing the only forum available for member clubs to spontaneously share ideas, it is a shame that attendance at the workshops is not higher. In fact, it may be useful if clubs direct their delegates to attend the workshops to permit the gathering and subsequent dissemination of information. Fortunately, the AGM hosts recorded the workshops and provided the SAC office with a copy for future reference.

Dave Belchamber, GGC

□

A HAMMERHEAD —

by any other means is just as dangerous

Debra Burluson

This particular maneuver is tried much too often by our 'hotshots' that's why I decided to reprint this article from the Bluenose newsletter, with words of caution by Eric Newsome and Ian Oldaker. ed.

When the lights are low and the mood is mellow in the clubhouse, a careful listener can detect magical incantations wafting from the darkest corners — murmurs of stall turn, hammerhead, barrel roll, and that most spellbinding of all, loop.

You can think of aerobatic maneuvers as three-dimensional drawings in the sky. The maneuvers are defined and assessed by how they look from the outside. Each one has a prescribed shape. Judging from party patter, stall turn seems to be the favourite maneuver. Stall turn is a British term, but it is an unfortunate choice of words, since the maneuver involves no stall and no turn; North Americans call it a hammerhead.

Here is how it should look: Starting from level flight, the aircraft pitches up to an attitude that will give a vertically upward flight line until it is almost stationary. It then yaws through 180 degree, either right or left, bringing it to an attitude which will result in a vertically downward line. This line is held briefly, then the aircraft pitches to a level flight attitude to complete the maneuver.

The aircraft should yaw cleanly, without skidding upwards, moving sideways, or rolling. How can you get a nice crisp pure yaw without skid or roll? By holding forward stick as you fly up the vertical line, and waiting until the aircraft is almost stopped before hammerheading out. STOPPED, not stalled. If it's done right, the yaw will occur with nearly zero G, zero airspeed, therefore zero lift, zero drag (and no defined stall). Yaw cannot produce roll if lift and drag are negligible. With almost no forward velocity at the top of the hammerhead, what provides airflow to make the rudder effective? Answer that one and you'll know why it is IMPOSSIBLE for a glider to do a clean hammerhead. There is no "prop wash" to provide zero airspeed airflow past the rudder. In a glider, all the controls will become useless at the top of the climb prior to the yaw. The resulting whipstall with or without a tail slide first, will be extremely violent. Damage is probable.

You might decide to try it with less-than-vertical up and down lines, and to hammerhead "early", that is while the aircraft still has flying speed. Now the yaw will produce roll, and pitch too. To preserve the plane of the maneuver you'll need lots of opposite aileron. Since you will be under some positive G, stall is a strong possibility. Worst of all, an elegant maneuver has been degraded into what amounts to a grossly skidded turn. It feels terrible and looks worse.

Another version you might have considered, especially if you took the words "stall turn" literally, is this: pitch up, perhaps a bit more briskly than for stall practice, and as the aircraft stalls stomp on a rudder and wait. Call this what it is — an incipient spin. It looks, feels, and is, rough and uncontrolled.

If you want to do an "up and around and down" type of maneuver, learn the *wingover*. It requires careful, coordinated flying, involves very moderate loadings, and feels and looks wonderful. Smooth accurate flying is needed to fly the aircraft around the maneuver without skidding, slipping or stalling. The wingover is a coordinated climbing turn through 90 degree, immediately and smoothly followed by a coordinated descending 90 degree turn. It begins and ends in level flight at the same altitude, but with a 180 degree change of direction.

Fly it through with a model airplane to be sure you understand what sort of flight path you are trying to achieve. Test your understanding before you go out to practice:

- At what point in the maneuver will the nose be at its highest attitude above the horizon?
- At the point of maximum bank, will the nose be above, on or below the horizon?
- If you froze the controls at the 90 degree of turn position, what would the aircraft do? Which way would the yaw string go?

Entry speeds of 2 to 2-1/2 stall are fine. Dive for speed if necessary, then establish a level line for a second or two. Begin with a coordinated gently banked climbing turn. Continue pitch and roll so that, as 90 degree of turn is reached you are at maximum bank angle and the highest point of the maneuver. Now fly the aircraft down the other side of the wingover, timing pitch and roll so as to reach straight and level as you complete 180 degree of turn, at entry altitude. The ball or yaw string should be centred through the maneuver. The two halves of the wingover should be symmetrical, that is the bank comes off at the same rate as it went on. At the peak of the wingover the aircraft is flying very slowly indeed, but it is not stalled. Maximum bank angle can range from 60 degree to just past vertical, unless restricted by the aircraft flight manual.

So in conclusion, remember:

- Our sailplanes have neither the strength nor the drag to bail us out of botched maneuvers.
- If you've already tried that "haul it up and kick it around" style of tomfoolery, and found it satisfying, then aerobatics is not for you.
- The real pleasure of aerobatics is not in doing it, but in doing it right.

A word of caution by Eric Newsome:

- Although the article doesn't say so, you should get *competent* instruction.

- There is a warning about tail slides in the article which comes in an unobtrusive way after mention of the hammerhead, which is when it is likely to happen. The difference between "standing still" and "plunging down backwards" is brief indeed. As I recall, a Swiss pilot of considerable experience and his passenger were killed in a Blanik as a result of a tail slide which wrecked the aileron controls.
- Advice to get entry speeds of "2 to 2-1/2 stall are fine" might be anything but fine — the handbook would tell you more accurately.

A word of caution by Ian Oldaker:

Debra has written an article with much food for thought! One might conclude that to learn aerobatics you had better be prepared to spend a lot of time at it, and perhaps to fall out of the sky a lot. However, what she omitted to say is very important, and this is that, if you are interested you should certainly *get an aerobatic instructor to teach you the maneuvers first!*

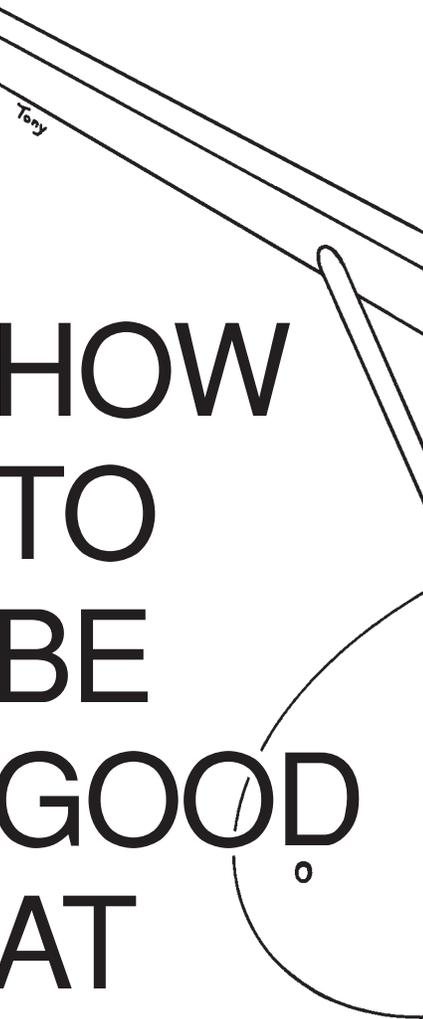
As she points out, the hammerhead is an inappropriate maneuver for a glider. If you are doing competitive aerobatics, you will be using a specialized glider such as a Salto, and you will be doing inverted turns, outside loops, and others that to us mortals would seem to be impossible. Who we are talking of here are the weekend pilots, cross-country pilots, and new instructors perhaps, who want to do some basic maneuvers. These are the wingover and the chandelle (180 degree turn from high speed to slower speed) which are excellent maneuvers for improving piloting ability. These are not easy to do well without prior instruction and practice.

When done properly, these aerobatic maneuvers give the pilot a great sense of accomplishment, and to the observer on the ground are great to watch. But even these basic maneuvers are not foolproof — a fatality resulted last year in the UK following a contest finish, when a chandelle that went wrong ended in a spin at the low altitude.

The moral of the tale must be:

- Aerobatics should only be done after thorough instruction from a qualified aerobatic instructor,
- Aerobatics must be done with due regard for the Air Regulations (altitudes, etc.) and the manufacturer's type handbook, and the Canadian type certificate.

If any pilot wishes information on more advanced aerobatics there are courses offered, for example in conjunction with the World Contest, held last year in Germany (see 2/82 page 6). Contact any member of the Instructor's committee or Jim Leach who will put you in touch with someone in your area. □



HOW TO BE GOOD AT IT

... a few words
on being an
instructor

Tom Bell
Base Borden Soaring Group

THE TASK of the glider pilot instructor is a relatively unglamorous one. The hours are long and often tedious, the pay – forget about it; he is expected to set an example in the air and on the ground, to be patient and tactful in all circumstances, and to be cheerful in all difficulties. It is a task that calls for fortitude and a dedication that few if any other associated professions call for.

There are very few glider instructors who would not prefer to be spending their hours aloft in a sleek ASW-20 or like ship and leave the sometimes doldrum activity of the flight instructor to others. Anyone who understands human feelings can sympathize with us and at least add moral support.

The good instructor must be a good pilot. Never could Mr. George Bernard Shaw's cynical comment "Those who can, do; those who can't, teach" be further from the truth when applied to flying instructors. Pupils imitate their instructors, in flying and in other ways and therefore the higher the standard set by the instructor the higher will be the standard of his pupils. The flying of an instructor should be smooth and polished, and it must be spirited. That is why there is always a need for the younger instructor cadre, those who can put some salt and vinegar into their instruction. This of course is not to indicate that our age bracket is automatically classified as the Geritol Gang.

The good instructor must know his subject and most important, he must be able to teach it. He must be able to describe, in his own words, what he is doing in the air and why he is doing it. He must study the pupils; he must understand them, and adapt his methods, and his words. His work of teaching does not begin and end in the air, before every flight a pre-flight briefing must be given and after touch-down a post-flight briefing must follow. In doing this he should make full use of models and illustrations and any other device he can think of. This instruction on the ground is an essential and often neglected part of flying training. While in the air the pupil is keyed-up, often cold and unreceptive; under such conditions long-winded explanations are altogether undesirable.

To help himself and the pupil, the good instructor insists on discipline by building up an atmosphere in which difficulties can be discussed freely and easily. In this area we have no need for Mr. Pomposity. The value of a sense of humour as a means of creating such an atmosphere is inestimable. The combination of good discipline and the willingness to help, by patient explanation and an occasional joke, is one of the greatest assets that an instructor can possess; it gives him the respect of his pupils and it enhances the value of his teaching beyond measure.

The instructor should develop the qualities of patience, perseverance and sympathy. He should at all times exercise restraint in language, however exasperated he may feel. He should study the psychology of his pupil to find out the best lines of approach to his mind, and will find it a good exercise in his power of judgment to analyze the aptitude of a pupil with a view to recommending further training avenues. One pupil may be nervous or under-confident. Give him more than the usual praise; don't let him suspect that his flying is other than normal. It is quite probable that his instruction has been too rapid. When flying with such a student, be careful not to show signs of apprehension in the air. Another may be over-confident or conceited. Set him or her a difficult task and criticize fairly but firmly for any lack of perfection in performing it. Go back over the previous sequences and insist on a really high standard of flying. Yet another is forgetful of former instruction. He will need all the patience and ingenuity that the instructor possesses.

Sometimes a student does not give his best or is inattentive. This may be merely a sign of laziness, but it is possible that he is undergoing some mental strain of an entirely per-

sonal nature — he may be in debt, or in love, or he is worried about his home life. If you know something or suspect something of this kind, try to help out or suggest a slight lay-off in the training problem till things are straightened out. There is the pupil who cannot handle the controls smoothly, who cannot do more than one thing at a time, who is slow on the uptake. Try simple remedies, make sure the controls are adjusted properly, he may also be benefited by joining into such quick reaction games such as squash, badminton, or table tennis. There is sometimes a feeling of antipathy between student and instructor; such a feeling may be purely personal and have little or nothing to do with the student's or instructor's ability. In such case the first thing is to try to break down the antipathy; but if this proves impossible the student should be transferred to another instructor.

If in doubt about the progress of a student, do not hesitate to ask for another opinion. Too often some instructor take it as a personal affront when he runs into a slow pupil and come hell or high water he is determined that the student will progress no matter what the consequences. Every hour devoted to this type of instructional technique is an hour wasted.

A student can only learn if he knows what he is trying to do. In each exercise the instructor must first explain the problem, then the various considerations that affect the problem, and finally the practical method of the solution. In order to learn, the student must be an active partner in the process of instruction. If all the effort needed is made by the instructor, very little will be gained. It is not enough for the pupil to listen or even to copy the actions of the instructor. He will learn little by mere repetition; he must think and act for himself. The instructor can help by telling him to analyze his own faults, he will then continue to learn even more whilst flying solo. Make the pupil his own instructor. Learning is not a steady process and the instructor should not expect it to be so. A pupil may show little or no progress for some considerable time; he may even tend to deteriorate, then quite suddenly it may all seem to come together. Even then the instructor should be wary of thinking that all has been achieved, there may still be further period of stagnation.

One aspect of instruction that is apt to receive insufficient attention is the art of speaking in the air. The instructor should spare no effort — and it requires effort — to speak distinctly, to find out whether he can be heard, and to choose the most suitable and correct words and phrases. An instructor should understand why things happen in the air, and should encourage students to talk shop with him at any time available. He should take an interest in the ground instruction being given to be the student and do all in his power to coordinate it with flying practice.

Finally, let the instructor think back to those who taught him to fly. If they were good instructors he knows they helped him; if they were bad, no one knows better than he in what respects they failed. By following the example of the good and avoiding the faults of the bad, and by consulting those who are more experienced than himself, he should have no difficulty in teaching his pupils to fly well, and in doing so he is gaining his rewards, a safe, well trained and competent pilot. □

OKANAGAN TALES:

FROM

KIT TO KITE

IN 5 MONTHS

... WEEKENDS HAD TO BE KEPT
FREE FOR GLIDING LESSONS ...

Richard Visscher, a structural engineer and a pilot with about 200 hours, started working at an Engineering firm in April 1981. There he found a kindred spirit in Peter Elms, a draftsman, who shared his interest in flying. Peter also had about 200 hours. They both enjoyed flying but the costs are somewhat limiting. In the course of their discussions, Richard made the suggestion that perhaps they should build a powered Monnett Monerai. To Richard's surprise, Peter advised him the next morning that he had phoned Illinois and that their kit would be arriving shortly, serial number 341.

The search was now started for a third partner to reduce the cost and add another pair of hands to speed the construction. Peter is also a hang gliding pilot and from among his hang

glider friends the third partner was found. Gregg Humphreys joined the project.

On June 9th, Richard and Peter drove to Spokane to pick up the kit. An empty warehouse was rented in Vernon for \$200 a month and the construction started. The literature indicates a construction time of 450 man-hours so the anticipated completion date was in mid August.

The plane was easy to build but it soon became apparent that the 450 man-hours was optimistic for first time builders, especially if they wish to pay attention to details and use good craftsmanship. Mike Erwin, another hang glider pilot, had shown an interest in the project as soon as it was unpacked and it wasn't very long before the partnership had increased to four members. This was much appreciated as the building time grew to 1100 man-hours.

None of the four had ever built an airplane before and certain improvements to the Monerai kit could be introduced to help such rank beginners. It would help if the plans contained an indication of how critical or precise certain components need to be. Also a pre-welded fuselage would be appreciated as this seems to be the heart of the ship. Finished spars would also save difficulties. In all, the builders now do about 95% of the work.

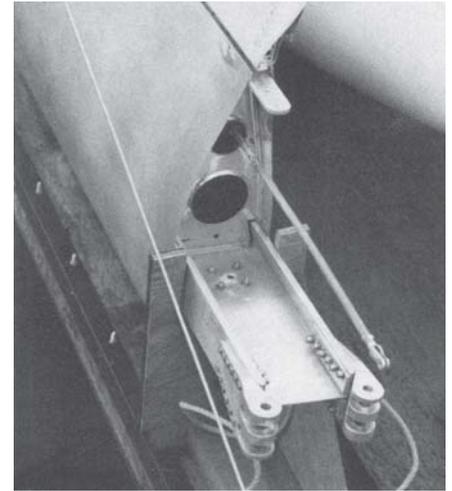
Although the kit is very close to being a complete materials package, quite a lot of money can be spent on incidentals like tools, paints, thinners etc.

The four partners spent practically all their evenings building and, in order to overcome the obstacle of having no previous sailplane experience, spent the weekends training with the North Okanagan Soaring Club at Salmon Arm. Their enthusiasm plus the support of instructor, Wayne Woodford, and towpilot, Ken Holmes, enabled them to reach licence standard by the end of the summer. However, the necessity of coordinating instructor, towpilot and towplane in order to get the flying going makes the prospect of self launching the Monerai, once the power pod is installed, something to really look forward to.

After the long (five month) construction period the Monerai was finally ready for test flying on November 14th 1981. Richard and Peter, being the only experienced pilots, were to do the testing. So far they are the only ones to have flown it.

The weather was 5000 feet overcast with rain showers but that didn't dampen the spirits. Richard won the toss and elected to do the first auto tow and let Peter have the first aerotow. Mike ran the wing and Gregg drove the truck. The 1000 foot rope stayed on the ground except for the last 30 feet as Richard climbed to about 15 feet, then released. Control response seemed adequate so after the auto tow Peter took the Monerai up on aerotow, only 10 minutes after the Space Shuttle had come in from outer space. Salmon Arm has only a 4000 foot runway, so the shuttle would never land there but it proved plenty adequate for the Monerai.

A few small snags showed up on the first flight. At 1000 feet the canopy fogged up due



'Monerai' wing root detail.

to the heavy rain. There was insufficient right aileron. The rudder pedals were too far forward (and Peter and Richard are both 6'1"!). The stick was too short and difficult to grip. Moderate turbulence kicked Peter around to 3200 feet and the flight lasted 17 minutes. He was speechless after landing.

The aileron linkage was adjusted, as were the rudder pedals and a decision made to extend the stick in the near future. Then Richard had his turn. He was also delighted when he came down.

FLYING THE MONERAI

The controls are very sensitive and the Monerai very responsive. Coordination is required from take-off. The tow is no problem with 25° of flap and high tow, except in turbulence where some yaw instability is noticeable. The ship is quiet and some mild oil-canning in turbulence is the only noticeable noise. Changes to the flap setting must be made carefully or else the pressure will take them off. The vent system works well to clear the canopy of fogging. Stalls are clean at 42 mph and should occur at lower speed after painting and general cleaning up. The flap is quite effective and the circuit is flown by entering at 1000 feet, lowering flaps to 45% and keeping the circuit tight. On final, the flaps are increased to 90% when the field is assured. The aircraft is flown right down where you feel sure your seat will touch the pavement. In spite of the shape of the canopy and seating position the visibility is good at all times. The cockpit fits well but is a little tricky to get into. However, a normal parachute cannot be worn. □

BC Soaring Newsletter



Unpainted, but happily airworthy!

HANGAR FLYING

WORLD RECORDS UPDATE

Hans Werner Grosse does it again. He has just set his 24th world record, again in Alice Springs, Australia. With an ASW-17, he completed a 750 km triangle at 144 km/h!

New Feminine O&R World Record. On 28 September 1981 Doris Grove (Ridge Soaring, Pennsylvania) flew a new O&R World Record of 1127.68 km with a Nimbus 2, departing from Piper Memorial Airport Lockhaven to Witten Cemetery. She is the first woman to earn the FAI 1000 km Diploma.

New Two-Seater World Record. On 28 September 1981, Tom Knauff (Ridge Soaring, Pennsylvania) flew a new multi-place straight distance World Record of over 1000 km with a Twin Astir, departing from Julian, PA to Westzipfell in Virginia. He averaged 91.68 km/h and took 11 hours to complete the flight using ridge and thermal lift. This is the first time a two-seater has exceeded 1000 km.

1000TH GLIDER IS LS4 #100 FROM ROLLADEN-SCHNEIDER

Only 14 years were necessary for glider production to climb to the magic figure of THOUSAND. Rumours cruise about an LS-6, an installation of a separate service department for better and quicker service, and a development department.

Rolladen-Schneider produces 10-12 sailplanes every month, and in hardly one year of series production, the 100th LS-4 was completed.

The new LS-6 (successor to the LS-3) will be a completely new design with carbon fibre spars. It will be a 15 Metre flapped sailplane with wingtip extensions to 17 metre.

Translation from *aerokurier*

CANADARM — A CANADIAN HIGH TECHNOLOGY CONTRIBUTION TO THE USA SPACE SHUTTLE PROGRAMS

Some members of SAC will recently have seen Past President and Director Dr. Karl Doetsch accompanying the astronauts Joe Engle and Dick Truly, who crewed the space shuttle orbiter Columbia on its second flight into space in November 1981. The crew was touring major cities in Canada on a goodwill mission whose purpose was to say "thank you" to Canadians for providing the remote manipulator system which is used to manipulate scientific payloads in orbit.

Karl, the Deputy Project Manager for the National Research Council, in collaboration with the Canadian aerospace industry (lead by SPAR Aerospace Ltd.) undertook the challenging task of designing, developing testing and evaluating this technically sophisticated computer-controlled robot arm for the world's fastest glider. Considerable spin-off is already occurring from this project into other space and nuclear power station applications.

LAST CHANCE FOR GLASFLÜGEL

Rumours have cruised throughout the soaring fraternity that Glasflügel had to announce bankruptcy. How could it happen that a company with the highest production figures in fibreglass construction, a company that introduced the fibreglass technology in sailplane design, should no longer exist? The world famous sailplanes designed by Eugen Hänle were of course the Libelle, and the 19m Kestrel (200 of them built under licence by Slingsby, England). Both sailplane types still enjoy great demand amongst pilots. The 604, new and other designs, followed in 1970-73.

This successful production line was to be followed by the Mosquito, the first 15m aircraft with flaps (Racing Class). However, an accident took the life of the designer, and the Mosquito was never built the way Eugen Hänle had intended, and when it was finally put on the market, it was too late.

The financial problems of Glasflügel have been known for some time, although they had produced more fibreglass aircraft than every other competitor at that time. Much had been done to prevent the disaster, yet bankruptcy had to be announced in September 1981. This step is difficult to understand as the company was just in a recovery phase with the 304, the 402, and finally with their newest development, the Standard Class Falcon, to continue Eugen Hänle's tradition.

Bankruptcy was not due to lack of orders, the production was sold out till 1982; internal difficulties between the partners called for this step. All shells however, will be finished, while untouched orders cannot be completed, unless a solution is found. And there also remains the question of service and maintenance and parts for the many hundred sailplanes throughout the world. It is still hoped that through intensive efforts Glasflügel can be kept for the sailplane fraternity.

Translation from *aerokurier* 12/81

ARGENTINIAN NATIONALS PROMISE GOOD WORLDS

Thirteen guests from Bolivia, Chile, France, USA, Spain, Austria, Switzerland, Poland and West Germany participated in the Argentinian National Championships in January 1982; observers from Holland and Australia were present. Eleven pilots in Open and 15m Class, sixteen in Standard with handicap factors (for example LS-4 0,964). The greatest task in 10 days was a pentagon of 759.5 km, completed by all but one of the 15m Class pilots! The wind was a major factor in these competitions, one day produced a 3-5 m/s thermals with winds to 100 km/h; the day was cancelled. Temperatures also increased steadily and many blue thermal days had to be coped with. Average speeds: Open 139.8 km/h, 15m 122.9 km/h, Standard 116.9 km/h.

Maximum speed in thermal conditions during one 325 km triangle: Open 150.2 km/h, 15m 131.8 km/h, Standard 118.5 km/h.

The conditions were greatly appreciated by all pilots and at the end of these ten days they all joined to celebrate this fabulous and accident-free meet.

AUSTRALIAN EAGLE MIDAIR

In a recent Queensland State Championships, a pilot was knocked out of the contest by an eagle strike. Paul Weyland, flying a Libelle, was about 2000 feet agl when a six-foot wing span eagle made two passes head-on. On the third pass the bird slammed into the tail, wrapping itself around the horizontal stabilizer and jamming the rudder. The pilot radioed that he was landing, with limited control. Fortunately, the mangled eagle dropped off at about 1000 feet, allowing a normal off field landing. An inspection revealed that the leading edge of the right stabilizer was crushed along its length, grounding the glider for the rest of the contest.

WORLD GLIDER NUMBERS

This list of the numbers of sailplanes in most countries is current as of October 1981.

West Germany	5979	Italy	250
USA	3533	New Zealand	236
Great Britain	1406	Yugoslavia	198
France	1327	South Africa	190
Poland	980	Japan	173
Australia	800	Brazil	131
Switzerland	764	Spain	121
Austria	731	Norway	83
Canada	410	Chile	28
Holland	390	Peru	16
Sweden	368	Iceland	15
Belgium	343	Greece	10
Denmark	332	Luxembourg	9
Finland	301		

ADVANCED INSTRUCTORS COURSE

with **Ian Oldaker**
at Winnipeg Gliding Club
Pigeon Lake Gliderport
18-23 July 1982

If you are interested contact your CFI immediately for recommendation, and mail your application to the National Office. Study material will be mailed to you, or for late entrants will be available on-site. If you go, take a sharp pencil along as *free flight* is very interested to hear about this experience!

Frits Stevens, CFI WGC, would give you more information (204) 888-1345 H (204) 837-8128

Application forms were mailed to you as part of the SAC letter from the President regarding the SAC AGM in Montreal and Notices of Motion.

LESSER KNOWN MEDICAL FACTS FOR PILOTS

Dr. Wolf D. Leers
Chairman Medical committee

INFECTIOUS DISEASES

Recently I was involved in a minor incident when I was towing. It was in part due to misjudgement, apart from other unavoidable circumstances. Two days later I came down with an influenza-like illness. Is there any relationship? Maybe! I did not feel sick or impaired at that time, but in retrospect, felt not as fit, mentally and physically, as usual.

Every infectious respiratory disease starts with the virus or bacterium entering the body, usually through the throat. There are no signs or clinical symptoms at that stage. The virus then multiplies in the cells and subsequently causes a sore throat. But at that time you already have had the "bug" for two, three or more days in your system without knowing it. This period between the virus entering your system and the first clinical symptoms is called the "incubation period" because you incubate the disease.

In this incubation period the body fights the virus without your knowing it by mobilizing its defense system. During this time you would likely not feel "all right", but you don't know why! Your alertness, physical and mental fitness is impaired, but you do not realize it. You catch yourself making more mistakes than usual, and feel miserable and irritable.

I can easily visualize that you may mistake the spoiler handle for the release knob (it has happened). You may forget the carburettor heat or flaps on the towplane, or other important preflight check points.

What happens during this incubation period before the clinical illness becomes apparent? The body retains more water, up to three litres. This increases the pressure in the brain and may explain why your first symptoms in the very early stages of an infectious disease are headaches, tiredness and irritability. Then two to three days later you get the running nose and sore throat and know why you did not feel "all right" the days before. (By the way, during a hangover, after excess alcohol, your body retains more water, leading to similar symptoms).

PREMENSTRUAL TENSION

These same physiological changes occur in our female pilots, one or two days before they have their menstrual period. This so-called "premenstrual tension" is due to increased water retention in the tissues. It may cause headaches, irritability or incapacitation in some women. This may explain why some days the female pilot just does not fly up to standard, and the instructor wonders why the student flew so well last week, but so poorly today.

Of course the female instructor is also subject to those changes in her system and should watch herself. If she does not feel "all right", she should not instruct.

EMOTIONAL FACTORS

Apart from the physiological factors, there are psychological aspects too! Any emotional upset or irritation increases the blood pressure and pulse rate for some time after the event. Such upsets are frequently not easily forgotten and have an effect lasting many hours. The symptoms: irritability and lack of concentration due to distraction of thoughts which go back to the time of the emotional event. Result: lack of concentration on the job at hand and the probability of more mistakes and impaired judgement.

CIGARETTE SMOKING

I feel that an instructor should not smoke at least an hour before he/she takes off with a student. The lowered oxygen affinity to the red blood cells in pilots who smoke may lead to hypoxia at considerably lower altitudes than in non-smokers. It is not safe to instruct a student who is not able to land the plane safely, if the instructor is in a state of hypoxia during flying, when the risk of blackout or even of a cardiovascular accident is real.

AGE AND GLIDING

Age is relative. We all live a life span more or less predestined by our genetic "make-up". More or less — because accidents, cancer and self-inflicted shortening of life by abuse of alcohol, nicotine or food will shorten our expected life span. It has not been conclusively proven that regular exercise will prolong your life but it surely makes the second half of your life worthwhile living. Because it does not matter how old you get, but how you get old!

It is no secret that "older" student pilots do not have the coordination and fast comprehension in comparison to a young student. But, an older student is usually a little more careful and wants to know why he has to do things the way the instructor teaches him; of course, there are wide individual variations and some people should never be allowed to fly, regardless of age. But this is outside this topic.

I disagree with a well renowned British glider instructor, who advises against people who want to learn to fly gliders after the age of 50. There are people at 35, whose life is "over" because they ruined it, but there are many fit, slim, well motivated pilots in their sixties, who have energy, motivation and maturity to become good pilots! They may need, however, instructors who understand their particular problems.

Older people are often more stable and mature. They have seen a lot, and don't take chances. There is no reason, why an older pilot should not learn to fly.

I think we will get more people, who decide to start flying in their 40s and 50s. They should be encouraged. Fortunately, society is not any more as much youth-oriented as ten years ago. Age is a matter of physical and mental condition, and not the number of years. □

* Presented in part at the CFI seminar in May 1978 in Toronto.

OPINIONS.....

Almost without exception all clubs have no money; some have good equipment and no money, others poor equipment and no money. But the ones that have good equipment are rarely bothered with problems such as lack of new members, or tow pilots, or instructors or improvement in flying skills, retention of experienced members, and fear, concerns or worries during times of upgrading equipment that a new bird might be bent five minutes after they have got it.

If looking at a ship of better performance encourages thought and commitment to the future which is growth, then that in itself justifies the purchase of a ship better than the type you have now. But as all equipment has to compliment each other, consider carefully the route.

For those clubs who are a long time away from a Twin Astir there is no excuse not to better utilize existing equipment in line with better training. Just as a Twin Astir will perform like a barge if flown like one, many clubs are guilty of using existing trainers the same way. Drastic examples:

- Why speed up for "kamikaze" circuits down prescribed fence lines?
- Why, when asking instructors to spin a glider, do they enter it from a nose high wing-over? Hardly what is done on a final turn.
- Why not teach incipient and full spin entry as well as recovery?
- Why not a minimum sink circuit, best L/D, full spoiler, no spoiler circuits? Why always "Do 65!"
- Why the lack of preflight and postflight discussion?
- Why fly differently above 1000 feet than below?

To those questions of course some will be outraged, some highly amused, but some will feel little flicks of guilt. The inevitable introduction to new equipment will create concern in those who already are barely able to cope. Unfortunately, the badly trained student later teaches as his instructor trained him. The magic ingredient is correct instruction from the first flight.

In attempting to do my bit I don't want for a minute to take any light from fine efforts being made by becoming one of those armchair critics. Or rubbish entirely those bad instructors who, apart from that, have put 20 years of hard work into their clubs. They themselves have been badly taught (or are rather self-taught. ed.)

I wrote the above not to criticize but perhaps to show: that persons like Ian Oldaker should have a lot of encouragement for their efforts, that there are many who believe that only the best of instructing standards should be accepted; that I hope to encourage change by questioning, justify ideas, and attitudes and things pilots do in soaring; and that I'm a very enthusiastic supporter of **free flight's** efforts to improve communication between clubs and between glider pilots.

Stephen Newfield
London, Ontario

TROPHY CLAIMS DISAPPOINTING

... All in all it was another very disappointing year in the Trophy Claims business. The reason you did not get a lot of hot news from me in the fall about trophy claims was that there were simply NO claims to report on. This is most disappointing because certain glimmers about some excellent flights appeared in *free flight* 4/81. Of the three 500 km triangles flown in the east this year, not one of the pilots saw fit to submit a trophy claim for his flight. Do we find ourselves in the position of first having to chase the horse around the field, then lead him to the water, and then try to make him drink? If SAC cross-country pilots are simply disinterested in the trophy awards then really there is not a lot we can do. Regrettably the lack of entries has to reduce the credibility and prestige of the awards.

... Perhaps 1982 will see a big turn-around in trophy claims and cross-country soaring in general.

Jim Oke, Winnipeg
Trophy Claims

OPEN LETTER ON RADIO FEE INCREASES

The Honourable Francis Fox
Minister of Communications
House of Commons
Ottawa, Ontario K1A 0A6

I have been advised by the Department of Communications that effective 1 April 1982 the aircraft radio licence fee has been increased 100% — from \$20 to \$40 annually; and I object.

My aircraft is a glider, one of perhaps 100 to 150 in all of Canada carrying aircraft radio. We are part of a recreational/sporting group of non-profit clubs organized under the Soaring Association of Canada. We do not fly the airways; we do not use the DoT airports. We rarely have occasion to communicate with airport towers or FSS. We do make a number of flights during the six to seven months seasons, averaging perhaps 25 flights per aircraft. We do have an assigned frequency of 123.3 MHz.

What are we paying for? Does your Department consider that this fee is equitable in comparison to those who fully utilize the air communications systems? Is it really necessary to have that additional four to six thousand dollars in revenue? I see this tax as unfair, unwarranted, and costly to collect.

Would your Department be able to supply data indicating the net cost to exempt all licensing of glider radios? Wouldn't it be better to charge once only, a fee for the radio operator's licence for qualified personnel? Perhaps data should be examined for cost effectiveness with a view to eliminating all aircraft radio licensing.

Your thoughtful consideration and reply to the foregoing would be appreciated.

Yours truly,
Bruce M. Hea, Calgary

If you also feel strongly about this matter, you should send a similar letter to the Minister and your MP — ed.

A GLIDING AVIARY

Eric Newsome



'Embryonicus Randomum' is entirely unpredictable and so is the cause of many nightmares and grey hairs among the 'Pedagogicii'. He is apparently fitted with a switch that activates the moment he leaves the ground and which has the charming effect of turning off his brain.

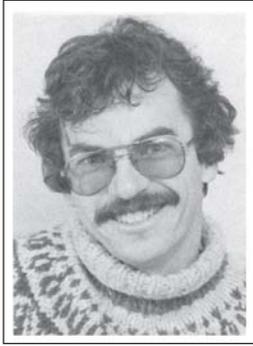
It is a curious fact that when one of the 'Pedagogicii' is driven demented by Randomum's inability to maintain a steady airspeed and so turns him over to another instructor, the airspeed control will become rock-steady, but Randomum will then exhibit a marked inability to turn without skidding wildly. On being told that it is time to land Randomum has been known to fly complacently away from the airfield until roused by the screams of the instructor who is beginning to fear for his life. At this point he has then been known to execute a perfect circuit in the opposite direction to all other traffic and, when somehow safely on the ground, has responded to the instructor's anguished cry of, "Why?" with an unbelieving stare. As Randomum flies like an

angel on one flight and like a wounded hen on the next, instructors are seen to hide as he approaches, in the hope that they will not have to make the fateful decision as to whether or not he is ready for solo flying. Eventually he corners a 'Pedagogicii' who has not been around for a few weeks and so doesn't know what he is facing, and produces a check flight of unexceptional quality. Only when it is too late and he is just airborne solo do the members of the 'Pedagogicii' clan emerge from hiding and inform the unfortunate colleague of the enormity of his deed. From that time on the guilty instructor watches the glider as though mesmerized, all the time steadily chewing on the brim of his hat. Inevitably the gods who look after fools and little children prevail, and Randomum makes a copy-book flight and lands like a feather. But wait until the next flight!

Who will remain a penguin, and who will soar with the eagles? No one knows, but here's to 'Aeronauticus Embryonicus', the future of the sport! □

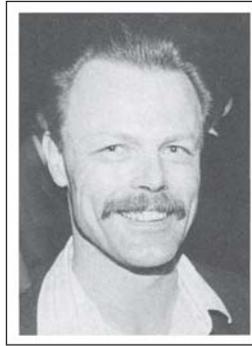
ACES NEW FACES NEW FACES NEW

TONY BURTON



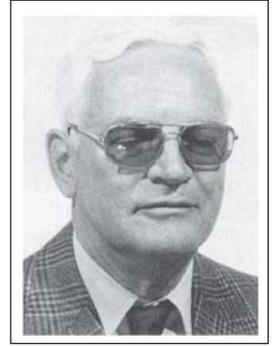
Alberta Zone
Director &
Vice-President

HARALD TILGNER



Pacific Zone
Director

GEORGE DUNBAR



Trophies &
Statistics
Chairman

Tony is replacing Dr. Mike Apps as Alberta Zone Director. Mike served one term on the SAC Board and as Vice-President of the Alberta Soaring Council. In 1982 he was elected President of ASC. Attendance and actions at government meetings, sport governing bodies, club gatherings throughout the province, and liaison with *free flight* demanded most of his free time, so he has stepped back to take a breather and try to remember the names of his wife and kids.

Tony took over Mike's position of Vice-President of ASC, and was also voted in as SAC Vice-President following the AGM in Montreal. Before his retirement in 1980, he served some decades in the RCAF as an electrical engineer. Tony built his well-known RS-15, EE, while on military exchange duty in Colorado Springs and St-Louis. This set an MoT precedent for Canadian citizens building a Canadian-registered homebuilt aircraft in the USA. He is an enthusiastic cross-country pilot, has flown in two Nationals and one Regionals with EE, and completed his Diamond badge last year. He calls himself a Senior Crew Member, having crewed in five World contests. During his term as FAI Awards chairman, Tony wrote the SAC Procedures Booklet for FAI Awards and Records as a guide for pilots and OOs. As a Board member, he will be a liaison Director for *free flight*, the Sporting and the Trophy and Statistics chairmen.

Harald Tilgner is replacing Lloyd Bungey as Pacific Zone Director. Lloyd served one term as Pacific Zone Director, wore the hat of the Vice-President of the BC Soaring Society and chaired the SAC Provincial Association. He intends to hunt more multiplace records, as he started with a straight distance record in July 1981. Good luck to Lloyd and the lure for records, but many thanks for your devotion in administrative matters and paper battles.

Harald learned to fly at GGC in 1967 and moved to BC in 1979 to join Vancouver Soaring Association. He belongs to the breed of "always-there-when-needed" as instructor and tow-pilot. Although he logged 300 hours in sailplanes, and is partner in a Standard Jantar, there is little time to upgrade his Silver C badge.

As for SAC matters, Harald showed always extreme interest in the national organization's activities, and he attended every SAC AGM since 1968. He is well aware of the ongoing problems and those of the past.

George went to McGill University in Montreal some 40 years ago, when he met a group of young enthusiasts who were eager to learn the art of soaring — they started with hops and bungee launches. After his graduation in chemical engineering he left for Dartmouth, Nova Scotia where he formed, together with Chem LeCheminant and Doug Shenstone, the Gull Gliding Club. In 1950, George and Grace Dunbar moved to Sarnia, Ontario, formed the Sarnia Gliding Club and took over the post of the SAC Secretary and Treasurer for awhile. George also served one term as Director in SAC as well.

George has lived in Calgary now for many years. He loves to fly his beautiful Slingby Dart, F-OAK, but competition flying is not as much on his mind; rather he devotes some time to his own computer programs which he used as Scoring Master in many Regionals and Nationals in the West.

FIRMAL

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THE 1-26



BADGE #2

Harold Eley

Regina Gliding and Soaring

THE DISTANCE DIAMOND

The final diamond leg was the 500 km task achieved with a Goal flight of 325 miles from Regina to Carrington, North Dakota, on 14 June 1969. The sky was clear, and winds were light, so almost with tongue-in-cheek I declared the impossible goal. As it turned out, there was plentiful lift over 10,000 feet and I moved out nicely. The first 90 miles were absolutely cloudless but the next 100 miles or so had those beautiful cu to lead me on. The next area was solid overcast but the lift was still working, though weaker and to a lower cloudbase. Minot appeared far to the west of me and I remembered scraping into that airport a year earlier, and here I was sailing past with 6000 feet in hand! The last 50 miles were touch-and-go in a 1-26 because the lift had about died leaving just a clear sky.

With care and a prayer and the odd bit of lift and zero sink, I arrived over the goal with 2500 feet to spare. The crew arrived only two hours later without benefit of radio. To this date I am surprised that everything came together so nicely for this flight.

This flight completed my Diamond badge Canadian No. 12 and World 757. But it was also only the second Diamond badge in the world earned entirely in a 1-26 (No. 1 is Bill Cleary of the USA). Even now there are only twelve who have accomplished this. The 1-26 Association also honoured me with the Per Ardua Award for the most outstanding flights in a 1-26 for 1969.

ABOUT THE FLYING

Strangely enough I flew both Gold and Diamond altitude flights before I even completed my Silver C. The Gold climb to 22,700 feet came at Cowley, Alberta on 17 April 1960 and the Diamond to 24,800 came on 1 April 1961. That climb was a real thrill; after a tow through some pretty rough air, we hit silky smooth lift and I went right up.

I got my Silver C in June of the same year and completed Gold distance the next June with a 200 mile flight to Waskada, Manitoba. It was six years later before I was to get any more Diamonds. In June 1968, I flew a Goal flight from Regina to Minot, a distance of 214 miles. The trail was well worn, as it was the same goal to which Julian Audette arrived in

setting a Canadian Record years earlier (see 2/81 page 12). It was also the goal reached by four gliders in a task at the 1966 Nationals. Even so I barely made the goal and arrived with only 600 feet to spare

OUR GLIDER

Brother Wilbur and myself purchased a Schweizer 1-26 from Al Foster of the Cu Nim club after a National Meet in Regina in 1959. In time I was able to get all my FAI soaring badges in this glider.

HOW I BECAME INVOLVED

- Oldest brother Norman was an aviation buff from back into the 20s.
- Two oldest brothers built primary glider, a German Zögling, back in 1937-39.
- I was the youngest family member allowed to fly it at age 12. Ballast was required as I was small for my age.
- Didn't get back into flying again until 1955 at the Regina club where I soloed in a Cinema.
- At one time, in the Regina club, there were eight Eleys participating, representing two generations. One flew tow only, but the rest mostly flew gliders. □

AIRTECH CANADA ad

(Jantar Standard 2)

CLUB NEWS

WINNIPEG PR SUCCESSFUL

The 1982 Winnipeg Gliding Club Open House was a great public relations success. On 10 February, Theatre B in the Basic Sciences Building, Medical College, was packed full of interested Winnipeg inhabitants including about 40 Club members; approximately 140 people showed up in total.

They were set up for an evening of entertainment. Jeff Tinkler, our Fearless Leader, made some introductory remarks; then followed a half hour movie titled "Soaring Country"; our CFI Frits Stevens talked about Club operations and training, the Membership chairman about the costs of flying gliders, then a slide presentation, and finally there was a question period where people found out what they had spent the whole evening waiting to find out. The following Wednesday 35 people committed themselves to the sport of gliding.

I'd like to give a special thanks to Barbara Goodwyn who managed to provide the club a lot of advertising on CBC television/radio; first a 30 second commercial which was stuffed in whenever there wasn't a pay commercial, secondly she arranged for club member Mirth Rosser to appear on the CBC lunch-time news show "News at Noon" in an interview with Murray Parker. Thirdly, she arranged for the CFI to appear on "Community Billboard" giving a few views on gliding. A thanks goes out for all members who helped with the Open House. A job well done!

MSC UPDATE

From the MSC Annual Report

Finally the Twin Astir made its mark in 1981 to lay to rest the woe preachers. During August it recorded the second highest number of flights for any club ship and on 23 July flew a splendid 312 km triangle which could have been a record if the pilots had carried a barograph — three cameras and no barograph! The season was not accident-free, although fortunately, there were no injuries. The ASW-17 was damaged in a landing accident. The lesson to be learned from this accident is the importance of a thorough check-out, familiarization and flight characteristics evaluation when making the transition to a new sailplane.

The second 1-26 trailer was refurbished, complete with a new wheel and tire, the Blanik trailer got a coat of paint, the Twin Astir trailer was completed. The team on statistics and log books enabled accurate planning of 50 and 100 hours inspections. The clubhouse roof was rebuilt and foundations re-adjusted to correct floor levels and defects appearing in the structure. Insulation was put around the pillars to prevent heaving as much as possible. The Quebec Provincial Soaring Championships were a success and would have been more so had the weather been more helpful.

When it came to unpacking and packing the hangar in midweek flying, the vast majority of the work seemed to be done by the vast minority

of the flyers. It is amazing how some aviators delight in bending the rules when they feel they are free of watching eyes. The towpilots are perfect flyers and thermal sniffers, look after the well-being of the aircraft they fly as if they would own them, they are devoted pilots.

NEW WGC TRSA RULES

Procedures for flight through Winnipeg TRSA (Class C Airspace). SAC has been negotiating with Transport Canada concerning the impact of planned airspace redesignation on glider operations since the summer of 1980. The most important provision from our point of view was the inclusion in the draft Air Navigation Order of a transponder requirement for flight in Class C airspace, which is basically the TRSA as we know it today. SAC objected to this and requested a waiver of the provisions for sailplane operations or at least a government project to produce a suitable transponder which would be merely a radar enhancement device on a fixed code. We were quite optimistic after a meeting between SAC and Transport Canada (see 3/81 page 7 and 1/82 page 4), however later in the year, correspondence was received that rejected both ideas but which left the door open for negotiations on the local level.

Here's how it worked for the Winnipeg Gliding Club:

We have a good rapport with Regional Headquarters and ATC staff in Winnipeg and they both understand our cross-country flight requirements and know that the Soaring Area Extension has been operated for many years with little or no trouble. Consequently we were able to agree on a draft proposal in January of 1982 for presentation to Ottawa. This met no objection and it was returned to Winnipeg for signature.

What has happened: the draft ANO contained a paragraph that directed ATC to provide access to Class C airspace for non-transponder equipped aircraft provided certain provisions as deemed necessary by the ATC unit were met, so we mutually agreed upon a set of provisions:

1. Controller workload permits the activity;
2. Radar returns are acceptable;
3. Radio communication is established and maintained.

Actually, these provisions were required last year but were never formalized in an agreement.

Will we be denied access to TRSA? Chances are quite slim that this might occur as the three provisions detailed are not unreasonable. Controller workload on weekends is usually light to moderate and the radar quality is much improved over last year and is 'painting' gliders very well. Technical modifications and precise tuning of the ASR5 radar system are the reasons. This only leaves the radio requirement, and ATC can't be faulted here. So if we are denied access because of a poor

radio, we will have only ourselves to blame and it would be unfortunate to miss a good day because of poor flight planning. Radio procedures should be practised so that the time on-air is minimized and the communication is maximized. The only way to achieve this is to work at it and review the AIP. For those of you not used to more formal RT procedures, a little work with a tape recorder will help combat mike-fright or 'mangle-mouth'.

You may request any track through TRSA that you wish; the controller will react on the basis of the three provisions in approving the flight, and if any altitude restriction is required he will not use any altitude below 5000 asl. The sky is yours — enjoy it.

Dave Tustin, Chairman Airspace committee.
Dave will also help you if you have a particular problem in your Zone, so please contact him.

GLIDERS IN CANADA

The following list gives the number and type of gliders flying in Canada as of January 82. The list was compiled by Al Schreiter from insurance data, and therefore does not include non-SAC insured gliders or gliders which belong to the Air Cadets (they own 50 gliders, mostly 2-33s).

Schweizer 1-26	30	Skylark 3	3
Schweizer 2-33	29	DG-100	2
Blanik L-13	28	DG-200	2
Jantar Std.	15	HP-18	2
Ka-6	13	Lark IS-29	2
Libelle 201	10	Libelle 301	2
Ka6E	9	L-Spatz	2
Schweizer 2-22	9	LK-10A	2
Cirrus Std.	8	Monerai	2
HP-14	7	M-100	2
Lark IS-28	7	Mini-Nimbus	2
Pilatus B4	7	Nimbus 2C	2
Skylark 4	7	Pioneer II	2
RS-15	6	Schweizer 1-35	2
PIK-20B	6	Skylark 2	2
Astir Std.	5	Tern	2
ASW-20	5	Twin Astir	1
Bergfalke	5	ASW-17	1
K8	5	Club Libelle	1
Phoebus	5	Cobra	1
Schweizer 1-23	5	Dart	1
Cherokee II	4	Diamant	1
HP-11	4	Fauvel	1
K7	4	Gemini	1
PIK-20D	4	HP-16	1
ASW-15	3	Hornet	1
ASW-19	3	Javelin	1
Austria SH-1	3	Kestrel 17	1
Brieglieb BG-12	3	KW-45	1
Cirrus Open	3	Nimbus	1
Duster	3	Pirat	1
Grunau Baby	3	Preiss-S	1
K-13	3	RHJ-10	1
Kestrel 19	3	SB-7	1
LS-1	3	Sigma	1
Mosquito	3	Woodstock	1
PIK-20	3	Zugvogel	1
Schweizer 1-34	3	TOTAL	330

WINDSOR'S YEAR

Nineteen eighty-one was a good year for our club with a total of 87 flying days recorded. With a total of 1837 flights we logged 750 flying hours; 450 hours were flown with club equipment, and 300 with privately owned gliders.

Thirteen student members started their training at different times of the year and eight of them reached solo status. Among the eight, new solo pilots were three air cadets who were trained to licence status by us through a scholarship. 770 instruction flights were made by six instructors who deserve a lot of thanks as they do every year. This past year was also our most successful year ever as far as badges are concerned. During the year our pilots earned and claimed:

7 C badges 5 Silver C
2 Gold altitudes 2 Goal diamonds

For a 45 member weekend club, that seems pretty fair.

The Gold altitudes were flown by Mike Kappl, 15,000 feet gain and his son Mike Jr. 14,300 feet gain at Black Forest, Colorado. Goal diamonds were earned by Hans Berg in his RHJ-10 (which he had completed the previous year) in an O&R flight to Brantford in just over 5 hours for 315 km. Eric Durance only took 6-1/2 hours to accomplish the Diamond goal in a Ka-6 type homebuilt Pik 3C.

Other long flights which deserve mention were 250 km (attempted 300) by Joe Martin (K8) and Mike Kappl (L-Spatz) who struggled valiantly to beat the encroaching lake effect which is ever-present in our area.

Vladimir Konecny was presented with the Pilot of the Year Award for having soloed and completed Silver C in one season.

The Junior Pilot of the Year Award was presented to Mike Kappl Jr. who accomplished all three of the Silver C requirements in a single flight and added a Gold altitude gain at the end of the year.

We are looking forward to 1982 and hope to be able to do even better.

THERMIQUES SUR MANDEVILLE

Quelle sensation extraordinaire! Le temps de le constater et nous étions déjà à près de 3000 pieds d'altitude. J'étais vraiment "embarqué". Je n'avais pas assez de mes deux yeux pour tout observer: les indicateurs de vitesse et d'altitude, le variomètre et la fameuse petite bille noire.

Et le paysage . . . niet! J'étais trop à faire. L'altimètre indique 4200 pieds. Nous nous sentons siphonnés, toujours dans le même thermique, 600 pi/min. Vitesse constante, près de 40 mi/hre. Altitude 4800 pieds. Et nous montons toujours. Je sens l'excitation m'envahir. J'ai soudain le goût de chanter, de crier de joie même. Mais je n'ose pas, René va croire que je manque de contrôle ... Mais, je regarde comme un adolescent qui vient de recevoir sa première paye.

5600 pieds. À peine ai-je le temps d'observer que le majestueux lac Maskinongé s'amenuise

de plus en plus, que la ligne d'horizon s'éloigne et que Montréal est à portée de vue.

6300 pieds. WOW! C'est beaucoup pour le jeune vélivole qui n'avait pas monté plus haut que 4200 pieds auparavant.

Tout-à-coup je me rends compte qu'il fait froid. Pourtant c'est une très chaude journée de juillet. Je pense au coupe-vent que j'ai laissé dans l'auto. Un frisson me parcourt l'échine. C'est probablement l'altitude, 7200 pieds. Là je n'ai plus envie de chanter; ça devient sérieux. Nous sommes sous un immense nuage, le soleil a disparu, ou plutôt il est au sol et fait briller les lacs et cours d'eau. Le fleuve St. Laurent étire sa longue ligne fluide d'est en ouest.

7500 pieds. Je grelotte. J'ai oublié René, silencieux derrière moi. Le gros nuage, gris à la base est frangé sur le pourtour. J'ai l'impression d'avoir la fête sous un immense abat-jour. Ou plutôt je suis seul, dans une immense cathédrale grise et froide.

7700 pieds. C'est assez pour une première montée en thermique. Je choisis d'amorcer la descente en gagnant du côté du soleil. Les premiers rayons sont bienfaisants.

La détente procurée par la descente progressive ramène mes pensées vers le sol. Et puis, j'ai hâte de raconter cette inoubliable expérience, de "tirer la pipe" à certains, tout en savourant ma position de no. 1. La plus haute envolée, effectuée la veille, enregistrait 6200 pieds.

Roland Trudel
Aéro-Club-des-Outardes

Sensational, we are already at 3000 feet. I am really involved now, my two eyes are not enough to see everything: the deep green mountains, the river, the little houses tucked into the valley floor... airspeed, altimeter, vario ... This thermal is a 600 fpm elevator. 4800 and still climbing. I want to sing, or cry for joy; 5600 — Lake Maskinongé thins down below me, the silhouette of Montreal emerges on the far horizon; 6300 — it's a lot for a young flyer who was never higher than 4200 feet. I suddenly feel a chill on a very hot July day; 7200 — I don't want to sing any more, it's a serious matter now. We are under a huge cloud, the sun is covered; 7500 — I shiver. I feel alone like in a huge grey and cold cathedral; 7700 — that's enough for me, I want to return ...

MISSISQUOI

Last year was an exciting one for us, Steve Brady joined us as tow-pilot making flying on Thursdays possible. He is also an exuberant soarer, adding some zip to the scene. The Sherbrooke club flew with us all season, adding much appreciated companionship and income. Bob Hyam (Asbestos) towed for us frequently, but his departure for Australia is a blow to us (see Club News 1/82 page 17). Bob has been active in this area as a flyer since I first met him and his wife Grace in the summer of 1969 at the old Dubreuil Airfield on the outskirts of Sherbrooke. Montreal Soaring Council was quick to respond to a call for tow-pilot help, and two men visited us and flew our 170. Our ad for towpilots was posted in

the MSC clubhouse, and we received a sympathetic ear. I would like to thank Bryan Quickmire and Bernie Palfreeman especially.

Three new members joined up and began training. Arnie Shuchat soloed at the end of the summer, then put his instructors and other veterans in their places by winning the spot landing contest. The other two were forced to withdraw for medical reasons. One discovered a serious problem as a result of his medical exam for his student permit, luckily for him.

Cross-country soaring was actively encouraged during the latter half of the season. No long flights were made, partly because of the weather, but we have established short closed courses, and are practising XC techniques. Knowledge of the peculiarities of lift near the mountains (Eastern Townships, ed.) is being accumulated so that successful flights can be made.

Every club has a solid core of hard-working members. Two of ours who deserve special appreciation are Bill Spence, a founding member, whose years of flying experience are invaluable to our operation, and Mary Spence, our secretary and advisor to the treasurer, president, CFI, and the rest of the club. With their help, our next season should be as successful as the last.

Kemp Ward
Waterville, Que.

SHUTTLE COMMANDER MEMBER OF WIDE SKY

We have a new member — Colonel Joe Engle, USAF, who commanded the US space shuttle 'Columbia' on its second voyage last November. Engle was invited by the club to become its patron member in January and he accepted while in Vancouver during his recent visit to Canada. (see also Hangar Flying)

The club plans to host Colonel Engle this summer as part of their tenth anniversary celebrations, slated for August. Arrangements have been made to bring Engle north at no cost to him and combine some flying with a little sightseeing. Engle is a keen hunter and wants to take a look at the area with a view to returning in pursuit of a Stone Sheep to complete his grand slam.

"It's a real inspiration to us all to have a pilot of Engle's stature agree to be associated with us. If you think of flying as a pyramid with progressively higher levels of skill being populated by ever fewer pilots, a man like Engle is right up there at the summit along with a few other astronauts. "Man, he's the fastest glider pilot in the world", said Peter Vanderguten, Club President. Though the 'Columbia' takes off like a rocket, it returns to Earth without engines and glides at speeds as high as Mach 18. Where we aim at a spot 200 feet short of where we plan to set down, they take a spot that's 9000 feet short. We flare out at two feet, they flare out at 1750 feet and where we're coming in at 60 knots, they touch the ground at 195 knots.

Engle's honorary membership fee of a dollar was met by Ron Murchie, a club member and local gunsmith.

FAI BADGES

Boris Karpoff
24-1/2 Deloraine Avenue
Toronto, Ont. M5M 2A7 (416) 481-0010

The following badges and badge legs were recorded in the Canadian Soaring Register during the period February 8, 1982 to March 28, 1982.

DIAMOND BADGE

41 Donald E. Rowe Cu Nim (World No. 3119)

GOLD BADGE

186 Colin Tootill SOSA
187 Seth Schlifer York
188 Colin C. Bantlin SOSA
189 Paul J. Thompson SOSA

SILVER BADGE

618 J. Robert Turnbull SOSA
619 Tony Brett Montreal

DIAMOND DISTANCE 500 km (310.7 mi)

Donald E. Rowe Cu Nim 504 km Open Cirrus Black Diamond, Alta

DIAMOND GOAL 300 km (186.4 mi)

Brian John Milner Kawartha 306 km Pilatus B4 Ridge Soaring, PA
Paul J. Thompson SOSA 306 km Std Cirrus Rockton, Ont.

DIAMOND ALTITUDE 5000 m (16,404 ft)

Harold E. Yardy COSA 5090m RS-15 North Conway, NH
Derek Kirby Erin 5365m Lark 29D2 Black Forest, Colo.
Seth Schlifer York 5305m 1-36 Black Forest, Colo.
John C. McDowell York 5030m Lark 29D2 Black Forest, Colo.
Heiko D. Leers SOSA 5545m 1-34 Black Forest, Colo.
Wolf D. Leers SOSA 5580m 1-34 Black Forest, Colo.
Peter M. Corley SOSA 6035m 1-36 Black Forest, Colo.

GOLD DISTANCE 300 km (186.4 mi)

Brian John Milner Kawartha (see Diamond goal)
Paul J. Thompson SOSA (see Diamond goal)

GOLD ALTITUDE 3000 m (9842 ft)

Harold E. Yardy COSA (see Diamond altitude)
Colin Tootill SOSA 4785m Pk20D North Conway, NH
Anne Maria Van-Maurik York 3200m 1-26 Black Forest, Colo.
Fred Schnell York 4785m 1-34 Black Forest, Colo.
Seth Schlifer York (see Diamond altitude)
John C. McDowell York (see Diamond altitude)
Steven J. Mason SOSA 3720m 1-34 Black Forest, Colo.
Heiko D. Leers SOSA (see Diamond altitude)
Michael Kappi Sr. Windsor 4510m 1-26 Black Forest, Colo.
Michael R. Kappi Jr. Windsor 4175m 1-26 Black Forest, Colo.
Colin C. Bantlin SOSA 3900m RS-15 North Conway, NH

SILVER DISTANCE 50 km (31.1 mi)

J. Robert Turnbull SOSA 61 km Ka6CR Rockton, Ont.
Tony Brett Montreal 146.5 km Grob Astir Hawkesbury, Ont.

SILVER DURATION 5 hrs

Guerdon W. Killam Vancouver 7:05 1-26 Hope, BC
Blaine Grills York 5:07 2-33 Arthur, Ont.
Stewart B. Pritchard Cu Nim 5:08 Std Cirrus Cowley, Alta.
Margaret E. Sears Montreal 5:20 1-26 Rockton, Ont.
Charles D.F. Keith York 5:07 ? Arthur, Ont.
Fred Sinclair London 5:10 Ka6 Embro, Ont.
Peter R. Sully Gatineau 5:53 Skylark 3B Pendleton, Ont.

SILVER ALTITUDE 1000 m (3281 ft)

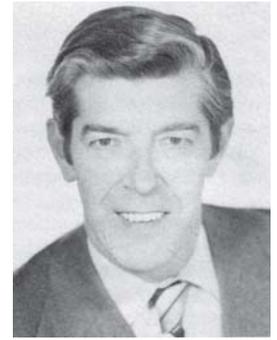
Harold W. Cook Serene 1597m Tern Cowley, Alta.
J. Robert Turnbull SOSA 1570m Ka6CR Rockton, Ont.
Margaret E. Sears Montreal 1250m 1-26 Rockton, Ont.
Al Scott COSA 1160m Monerai Chemong, Ont.
John C. McDowell York (see Gold and Diamond altitude)
Heiko D. Leers SOSA (see Gold and Diamond altitude)
Chris Brownhill York 1554m 1-26 Black Forest, Colo.
Gerald C. Dempsey York 2713m 1-34 Black Forest, Colo.
Peter R. Sully Gatineau 1402m Skylark 3B Pendleton, Ont.

C BADGE 1 hour duration

1789 Kevin W. Moore York 2:20 1-26 Arthur, Ont.
1790 John C. Benham Vancouver 1:52 1-26 Hope, BC
1791 Guerdon W. Killam Vancouver 7:05 1-26 Hope, BC
1792 J. Robert Turnbull SOSA 5:23 Ka6CR Rockton, Ont.
1793 Stephen Braginetz Montreal 1:08 1-26 Hawkesbury, Ont.
1794 Alan J. Pickard Bulkley Valley 1:31 Blanik Smithers, BC
1795 Margaret E. Sears Montreal 5:20 1-26 Rockton, Ont.
1796 William E. Moon Windsor 1:25 K7 North Conway, NH
1797 Claire Miquet — — —
1798 Charles D.F. Keith York 5:07 ? Arthur, Ont.
1799 Fred Sinclair London 5:10 Ka6 Embro, Ont.
1800 Tony Brett Montreal A, B, and C badges earned in England
1801 Donald G. Corkum London 1:21 2-33 London, Ont.
1802 Peter R. Sully Gatineau 5:53 Skylark 3B Pendleton, Ont.

BORIS
KARPOFF

FAI
AWARDS



Boris S. Karpoff is taking over. He was born in Liège, Belgium in August 1931. He is a mining engineer and a senior associate with David S. Robertson and Associates, a consulting mining and geological group.

He saw his first gliders during the war when German pilots were training in the Ardennes. The family moved to Canada, Quebec City in 1951, and during the winter 1953-54, Boris had his first introductory flights with his professor of Applied Mechanics, Alexandre Krieger, today the Quebec Zone Director for SAC. Some 22 years later, he was re-introduced to gliding and became an active member of Erin Soaring Society.

During the summer months, when not on technical assignments 3000 feet below ground, he flies his Ka6CR above ground from Erin's new gliderport.

He has his Canadian, American and Mexican Glider Pilot Licences and holds a Silver C badge. As a result of the yearly October wave camp at North Conway, New Hampshire he holds an altitude Diamond gain by ... 10 metres.

His next goal is to fly, fly and fly to get his 300 kilometres.

LETTER FROM BORIS

Many of you will notice, this is my first submission to *free flight* of badges and badge legs as your newly appointed FAI Awards chairman.

At this time, I would like to thank Dave Belchamber for the super work he did in the past two years and for his thoughtful wishes expressed to me in the last *free flight*.

The job is very interesting, rewarding, time-consuming and ... frustrating. To all Canadian glider pilots, CFI's and most of all, to every Official Observer in this country:

PLEASE SHAPE UP!

and I urge you to re-read a letter written by Tony Burton in 2/82.

Let me tell you about my findings in the last six weeks, while processing your claims:

Out of fifty-one applications for badges, badge legs or FAI certificates, I refused three for late arrival (and don't blame the postal service for that!), and:

1. no payment was included in two;
2. insufficient funds in ten;
3. no indication of solo hours, while requesting an FAI certificate in three;
4. no photographs for the FAI certificate in two;
5. no pilot's signature and no date in one;
6. no barograph trace for a silver height in one;
7. barograph calibration chart out-of-date in one.

GLIDER PILOTS! Do you want your badge flight processed as soon as possible? Yes? Then make sure that the application form is COMPLETE and all questions are answered.

continued on next page

RECORDS UPDATE

Russ Flint

FAI NO.	TYPE OF RECORD	OPEN	FEMININE			MULTIPLACE				
4.6.1	Distance (km) Straight distance	R.M. Cook	724 (C)	1971	A. Williams	305 (C)	1975	J. Proudfoot (G. Fitzhugh)	304 (C)	1981
		D.J. Marsden	676 (T)	1968	A. Williams	209 (T)	1973	L. Bungey (D. Lovick)	253 (T)	1981
4.6.2	Straight distance to goal	D.J. Marsden	676	1968	A. Williams	305 (C)	1975	R. Shirley (J. Juurlink)	153 (T)	1959
								A. Williams (E. Bell)	76 (Fem)	1979
4.6.3	Out and Return distance	J. Firth	554	1976	B. Histed	315	1981	J. Proudfoot (G. Fitzhugh)	304(C)	1981
4.6.4	Distance round a triangular course	J. Firth	753	1977	NC			D. Marsden (E. Dumas)	422	1979
					NC			NC		
4.6.5	Speed over a triangular course (km/h)									
a	100 km	R.M. Cook	113.4 (C)	1970	A. Williams	54.5	1976	D. Marsden (M. Jones)	98.1	1975
		J.M. Firth	103.8 (T)	1975				A. Williams (M. Stone)	31.0 (Fem. C)	1970
(not FAI)	200 km	R. Mamini	91.6	1973	M. Barritt	68.7 (C)	1970	G. Buhr (P. Tingskou)	42.8	1969
b	300 km	R. Mamini	110.1	1973	NC			D. Marsden (E. Dumas)	69.9	1975
(not FAI)	400 km	J. Firth	77.9	1974	NC			NC		
c	500 km	R. Mamini	101.8	1973	NC			NC		
d	750 km	J. Firth	87.4	1977	NC			NC		
e	1000 km	NC			NC			NC		
4.6.6	Altitude (m) Gain of height	W.F. Chmela	8321 (C)	1974	A. Williams	5898 (C)	1969	R. Shirley (P. Campbell)	7100	1961
		B.M. Hea	7841 (T)	1981				A. Williams (M. Kossuth)	2987 (Fem. C)	1970
4.6.7	Absolute altitude	W.F. Chmela	12449 (C)	1974	A. Williams	9772 (C)	1969	W. Chmela (A. Van-Maurik)	10390 (C)	1975
		B.M. Hea	10485 (T)	1981	A. Williams	3940 (T)	1973	R. Shirley (P. Campbell)	9085 (T)	1961
								A. Williams (M. Kossuth)	4206 (Fem. C)	1970
4.6.8	Speed over an Out & Return Course (km/h)									
a	300 km	J. Firth	102.7	1977	NC			W. Chmela (H. Rominger)	65.0 (C)	1976
b	500 km	J. Firth	85.8	1976	NC			NC		
	Speed in straight Line to Goal (km/h)									
(not FAI)	100 km	O. Band	59.4	1975	NC			W. Chmela (R. Zimm)	47.0	1971
(not FAI)	200 km	J. Firth	70.0	1970	NC			NC		
(not FAI)	300 km	W. Mix	108.6	1966	NC			J. Proudfoot (G. Fitzhugh)	70.2 (C)	1981
(not FAI)	400 km	NC			NC			NC		
(not FAI)	500 km	D. Marsden	97.1	1970	NC			NC		

"C" indicates that the record was obtained by a Canadian citizen in some country other than Canada (Citizen's)

"T" indicates a record was obtained within Canada (Territorial). A record is noted as "Territorial" only when there is a greater "Citizen's" record in the same category.

The absence of either a "C" or "T" implies, of course, that the record was set by a Canadian citizen within Canada.

The second name noted on multiplace records is the passenger or second pilot on the flight.

DIAMONDS TOTAL 3100

A list published by Aviasport classifies nations according to the number of FAI Diamond badges earned by their pilots. This list is current to the end of 1980 (there are now about 3100 issued to the end of 1981). Egypt is the latest newcomer to the list. Also, twenty-six 1000 km Diplomas have been issued to the end of 1980!

West Germany	837	Yugoslavia	17
USA	472	Finland	10
France	410	Argentina	8
Poland	408	Denmark	8
Austria	178	Spain	5
Switzerland	122	USSR	5
England	114	Japan	4
Australia	56	India	2
Canada	35	Romania	2
Italy	34	Brazil	1
Czechoslovakia	33	Egypt	1
New Zealand	30	Israel	1
Netherlands	30	Luxembourg	1
South Africa	26	Norway	1
Belgium	24	Rhodesia	1
Sweden	21	Zimbabwe	1
Hungary	20		

Letter from Boris ...

OFFICIAL OBSERVERS! It is your duty and your responsibility to assure yourself and the pilot that a flight was properly executed, monitored and that all relevant information are included on and *with* the application form.

As of now, I will not process any application if there are any unanswered questions or missing information. The application will be returned to the glider pilot or to the official observer.

To all of you hoping for super-long flights, my best wishes for a safe and "soaring" 1982 season.

PRICE CHANGES

Note that as of 1 March 1982 there have been several changes in the prices of FAI badges and supplies. To everyone submitting claims, refer to the supplies list on the back cover of this *free flight*.

ERROR .. ERROR .. ERROR

There is an important error in the Great Circle Distance example given in the SAC Procedures Booklet for FAI Awards and Records, Third Edition. In the sample calculation to the left of the figure:

$$\sin A = \sin 45.64165^\circ \text{ (not.. cos 45 ...)}$$

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82 NATIONALS

TELEPHONE MESSAGE FROM
COLIN TOOTILL:
6 April 0728 MST

We're getting it together — negotiations for a half hour TV special sponsorship program with a major brewery are in final stages — details should be announced shortly.

To date we've received 16 paid entrants, another 18 confirmed. Application forms have been mailed to all clubs. Entrants fee \$150 (the early entry fee of \$125 expired 30 April 1982). Please make cheques payable to Canationals 82. For more information contact: Colin Tootill, 815-41 Antrim Crescent Scarborough, Ontario M1P 4N4 (416) 292-8920 (H), (416) 751-6522 (B)

Five colour poster \$ 2.00
T-shirts with emblem \$10.00
Available from Colin Tootill



Design Jim Carpenter
COCA-COLA paid some of the poster costs

84 CALENDAR

Photographs for the SAC 1984 Soaring Calendar! We now, finally, have enough photographs for a 1984 calendar. It may seem premature, but we need to start shooting and collecting photographs within the next three months if we are to get a 1984 calendar out in time! It is my desire and intent to produce a calendar of world-wide marketing calibre. In order to do this we require top quality slides of gliders in the air.

Make it a project this summer to have each ship in your club photographed in flight. Make sure your club is represented in the calendar.

free flight will announce when and where your slides should be sent to. Be assured that we will treat your original photograph with the utmost care and respect, and return it to you promptly.

Dave Puckrin Publicity Chairman

Classified ads page & back page omitted

COMING EVENTS

Jun 12-19, Eastern Basic Instructors Clinic, hosted by Gatineau Gliding Club, Pendleton Airport, Ont. Applications to National Office. For more info contact Wolfgang Weichert (613) 836-1318.

June 26-Jul 4, Fly Weeks, New Brunswick Soaring at Havelock, NB (35 miles W of Moncton). For info contact Marilyn Dougherty, 6-15 Suffolk St., Riverview, NB E1B 3H2.

Jun 28-Jul 2, Flying Week, Winnipeg Gliding Club, Pigeon Lake Gliderport. Contact Frits Stevens (204) 837-8128 or (204) 888-1345 H.

Jul 1-10, Canadian Nationals. SOSA Gliding Club at Rockton Airfield, Ont. Contact Colin Tootill, 815-41 Antrim Cr., Scarborough, Ont. M1P 4N4 (416) 292-8920 H (416) 751-6522 B. Details in 2/82 and 3/82.

Jul 4-10, Western Basic Instructors Clinic. Hosted by Edmonton SC at Chipman. Applications to National Office. Info: Garnet Thomas 16623-93A Ave., Edmonton, Alta. T5R 5K1.

Jul 12-16, SSA 50th Golden Anniversary Safari, Heber, Utah. Contact Rick Matthews. Details see 6/81 page 19.

Jul 16-Aug 15, Kawartha Flying Weeks. Please drop in, they love to see more ships visit. For details call Graham McKay, (416) 668-3313, or write 1707 Dufferin St., Whitby, Ont.

Jul 17-25, Annual Soaring Weeks, hosted by London Soaring Society, Box 773 Stn B, London, Ont. N6A 4Y8.

Jul 18-23, Advanced Instructors Course. Hosted by Winnipeg Gliding Club, at Pigeon Lake Gliderport. Applications to National Office. For info contact Frits Stevens, 302 Boreham Blvd., Winnipeg R3P 0J6, (204) 837-8128 or (204) 888-1345 H.

Jul 24-Aug 2, **10th Cowley Summer Camp** at Cowley Airfield, Alberta. Hosted by Alberta Soaring Council. Contact Ken Palmer, 23 Baker Cr. NW, Calgary, Alta. T2L 1R3 (403) 284-1396 H.

Jul 31-Aug 8, Championnats Provinciaux du Québec à l'aéroport de St-Raymond. Les modalités sont toujours à l'étude en vue d'avoir une classe "compétition", avec handicaps, et une classe "sport", où les activités pourraient être plus "légères". Les détails suivront sous peu. Pour informations contacter CVVQ, CP 9276, Ste-Foy, Qué, G1V 4B1.

Aug 2-6, Flying Week, Winnipeg Gliding Club, Pigeon Lake Gliderport. Contact Frits Stevens, 302 Boreham Blvd., Winnipeg R3P 0J6 (204) 837-8128 or (204) 888-1345 H.

Aug 14, Kawartha "Roast". They extend an invitation to all. More under Club News 2/82 page 23. For details call Graham McKay (416) 668-3313, or write 1707 Dufferin St., Whitby, Ont.

Aug 21-29, Fly Week, New Brunswick Soaring at Havelock, NB (35 miles W of Moncton). For info contact Marilyn Dougherty, 6-15 Suffolk St., Riverview, NB E1B 3H2.

Oct 9-11, Cowley Wave Camp at Cowley Airfield. Hosted by Alberta Soaring Council. Contact Lee Coates (403) 242-3056 H or Ken Palmer (403) 284-1396 H.