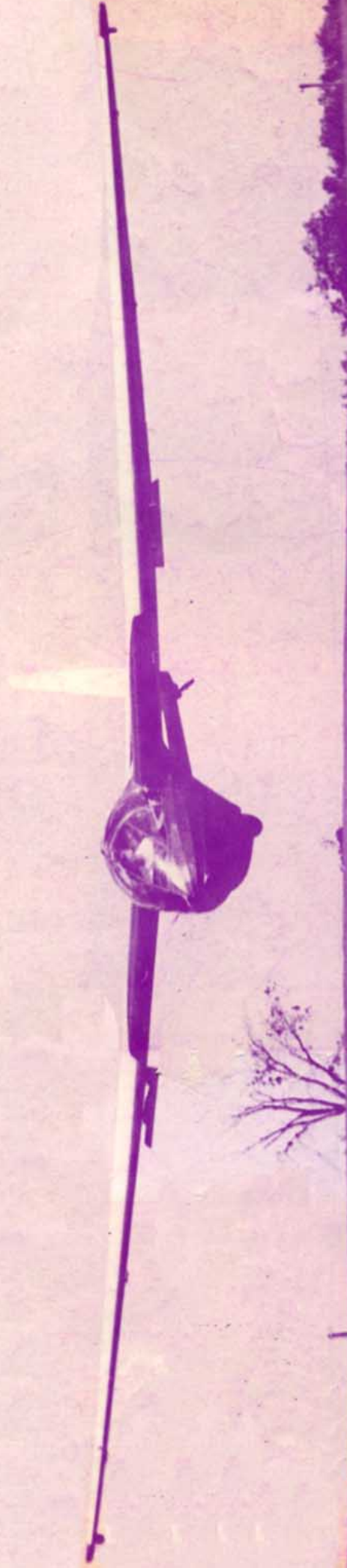


# FLIGHT

ISSUE 4/77 JULY/AUGUST 1977



# FREE FLIGHT



Issue 4/77 July/August 1977

Official Publication of

Soaring Association of Canada  
L'Association Canadienne de  
Vol à Voile,  
Box 1173, Station B,  
Ottawa, Ontario, Canada K1P 5A0

Editor: **Robert F. Nancarrow**

Associate Editors:

**John Bachynski**  
**Charles Villanyi-Bokor**  
**Lloyd Bungey**  
**Mark Perry**  
**Peter Masak**

All material for future issues should  
be submitted to the editor at:

**43 Sealcove Drive,  
Etobicoke, Ontario M9C 2C7**

Deadlines for Future issues:

**Deadline for the September/October  
issue is August 12, 1977**

**Deadline for the November/Decem-  
ber issue is October 14, 1977**

**Deadline for the January/February  
issue is December 12, 1977**

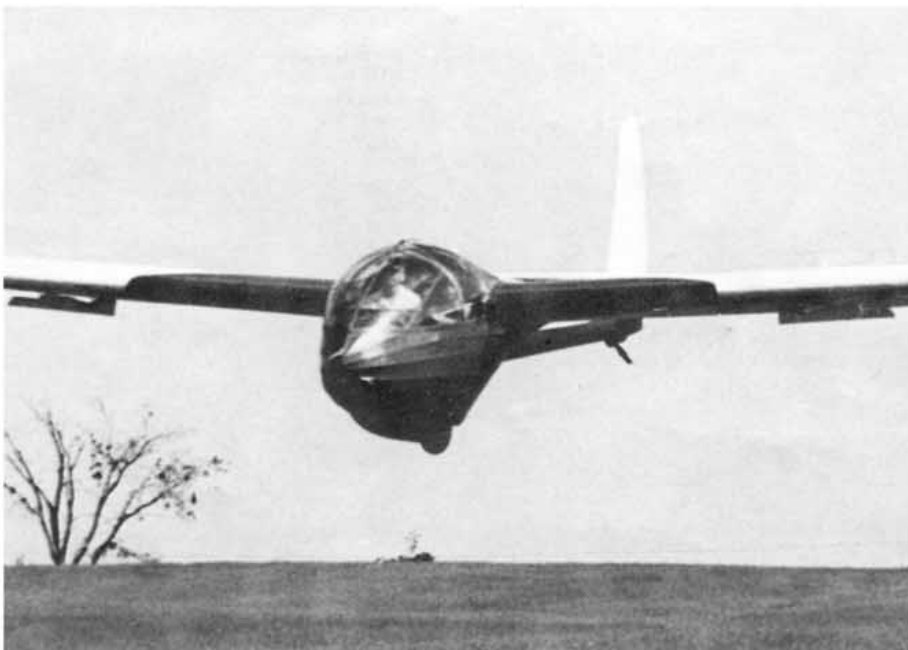
Address changes should be sent to:

**Mrs. Terry Tucker,  
786 Chapman Blvd., Ottawa, Ontario  
K1G 1T9**

Magazine design by Roger E. Murray,  
Graphic Design Centre, Toronto.  
Printed in Canada by the National  
Sport and Recreation Centre, Ottawa.  
Imprimé par le Centre national du  
sport et de la récréation, Ottawa.

Cover Picture:

Pratt-Read CF-ZAN formerly at London  
Soaring Society, now in the U.S. Pilot is  
D. W. McKay, photographer not known.



## Contents

**Silent Sky** 4

**B. C. Soaring  
Content** 8

by Lloyd Bungey & Christine Timm

**Committees  
& Chairmen 1977** 10

**Notes From  
The President** 11

**Appointment  
in Arizona** 12

**Someday You  
Will Fly Alone ...  
... but it's not  
just the flying**

A Trio by Bert Small

**Club News** 14

**Competitive  
Flying** 20

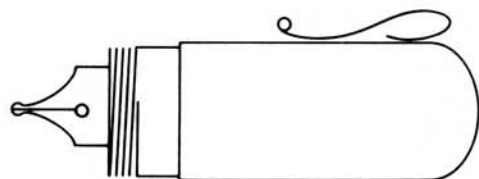
Translated by  
Guenther Geyer-Doersch

**Overseas  
News** 22

Edited by Lloyd Bungey



# Letters to the Editor



Dear Bob:

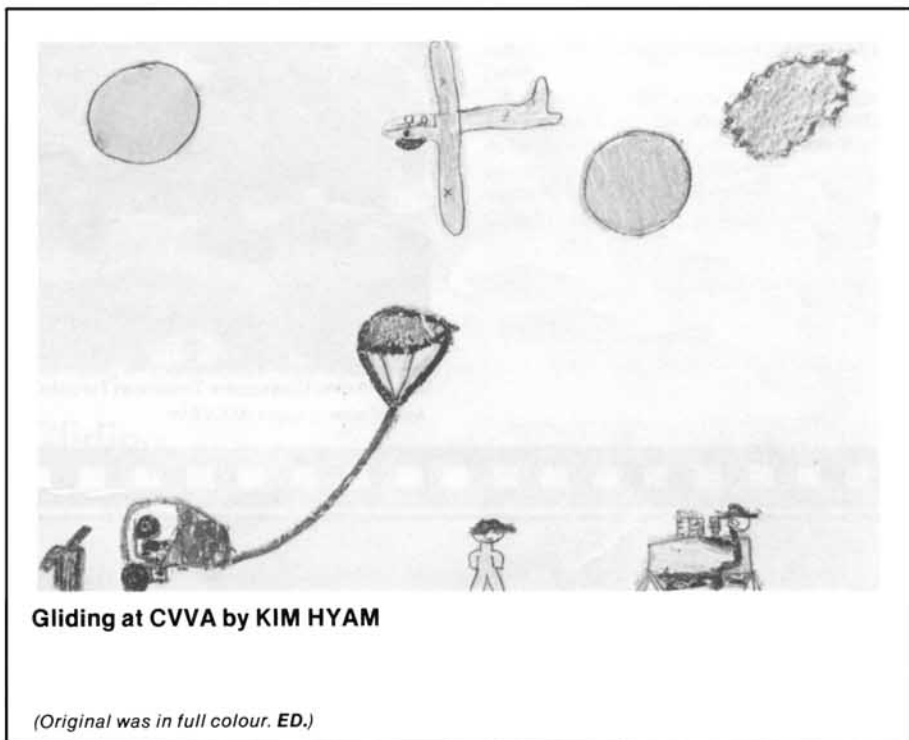
My daughter Kim age 7 produced this drawing of our gliding club CVVA Club VOL A VOILE Appalacienne.

It was quite a surprise receiving no prompting from me. The detail probably requires some explanation. From left to right first is the grease bucket used to lubricate the winch rollers before each launch, then the winch complete with engine. The character in the middle is our president ADOLF SCHERBAUME, and at the duty pilot desk my wife GRACE HYAM is dutifully doing her thing log keeping. The brown circle is Kim's rendition of a thermal which I remember explaining last year to her as a "bubble of warm rising air". The cloud is slightly displaced and I have just finished explaining the reason to her. Our trusty Bergfalke III completes the picture with the sun on the left.

I thought this picture might be of use to "Free Flight". It certainly gives a different view of gliding and sums up our operation very nicely.

I'll take this opportunity to thank you for giving me front page space in the Nov.-Dec. '76 issue.

Yours sincerely,  
R. Hyam



**Gliding at CVVA by KIM HYAM**

(Original was in full colour. ED.)

Dear Bob:

Terry Tucker has reminded me of a motion I put at the SAC AGM, recommending that the rules for the Roden trophy be modified to make them more applicable to present day club operation.

The Roden trophy was donated by Barclay Roden, an engineer at Canadair, to be awarded annually to the SAC club which made best use of its equipment. In those days clubs often had only one Schweizer 2-22 trainer plus one Schweizer 1-26 single seater, with perhaps a privately owned L-K or L-Spatz; tows were mostly by Tiger Moth or by winch. The number of flights and their duration was small. "A" badges, for 30 seconds free flight after release from a winch tow, were common.

Now the lowest acceptable international badge is the Silver C, and many clubs do not record A, B, and C, badge flights. The Roden trophy scoring, however, still includes numbers for A, B, and C badges, so this point alone requires modification.

At one time most clubs had just one towplane, so all were competing on an equal footing. Now some clubs have 3 towplanes, so the scoring formula should show towing efficiency by the number of tows per towplane. The present formula adds in the total number of gliders as a balancing factor, but with a large number of gliders in a club, numbers alone are not sufficient to measure efficiency.

The following examples represent aspects of the total efficiency of a club operation.

A Total flights, primary trainers/Total primary trainers

B Total flts. + total hrs., hi-perf. 2 seaters + private gliders

Total hi. perf. 2 seaters & private gliders  
C Total flights / No. pieces of towing equipment  
(A/C, cars, winches)

D First solos/No. primary trainers

E Silver C's/No. club single seaters

F MOT licences/No. flying members

A and D measure primary training efficiency, B general A/C efficiency, C launching efficiency, E encouragement towards cross-country flying, and F progress and efficiency of training.

Suggestions are invited for the loading to be given to any area of club operation, and for the incorporation of these and/or other factors into a formula which will give a measure of the efficient operation of a modern club.

Bob Cairns

Dear Bob:

I think I may have come up with the perfect solution for all those rained-out, no-gliding weekends when even hangar-flying grows dull and the earthbound pilot looks listlessly for something to sharpen his wits on. Why not (I suggest) soar for once on the wings of Pegasus rather than of your favorite glider, and enter the National Flimerick Contest?

The rules are simplicity itself, and even A-badge pilots without a solitary diamond to their names can enter. All you have to do is produce a limerick (the sillier the better) on any subject whatsoever (though slightly risqué ones are

naturally preferred). The one restriction is that the limerick must contain as many international radio call letters as the context will bear. Here is an example of what I mean:

Oscar, a uniformed Yankee,  
Loved three things: whisky, golf, hanky-panky.

He took Juliet -- well,  
To the Delta Hotel;  
Little wonder her Papa was cranky!

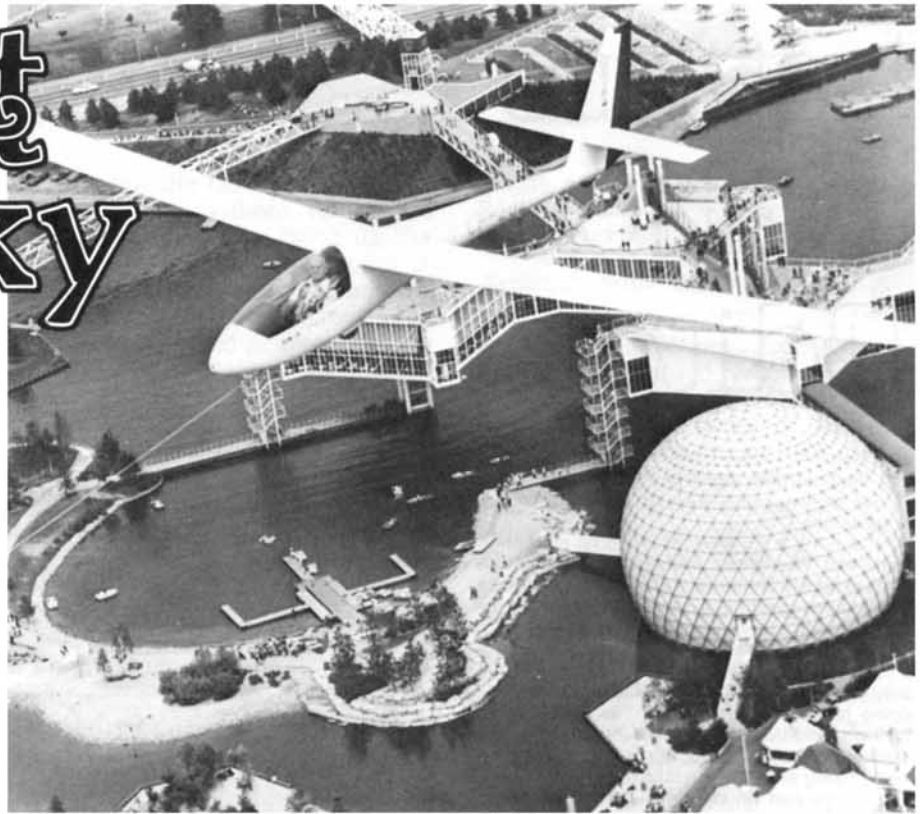
With 26 call letters from Alpha to Zulu to choose from, the combinations are virtually unending and limited only by the writer's ingenuity.

As an old flimerick-fancier myself, I should be happy to share in the task of adjudicating the contest, if Free Flight decided to run it. Perhaps the winning entry and the runners-up could appear in the pages of Free Flight. How about it?  
Thomas A. Reisner

Send all entries for the National Flimerick Contest directly to Thomas Reisner, Apt. 9, 3446 Maricourt, Ste-Foy, Quebec, G1W 2M6.

Free Flight will award prizes for the best entries. ED.

# Silent Sky



ASW-15 over Cinesphere Theatre at Toronto's Ontario Place.  
Actual size of giant IMAX film.



When he flew his ASW-15 in an air show at King, Ontario six years ago, Oscar Boesch had no idea what he was getting into. There have been dozens of shows since then and at least another dozen scheduled for this season; Bagotville, North Bay, Trenton, Hamilton, London, Detroit, Warwick Rhode Island, and of course the Toronto Air Show at the CNE, to name a few.

A year or two back cinematographer Laszlo George saw Oscar performing his loops, spins and rolls and was struck by the grace and beauty of silent flight. Laszlo talked of filming sailplanes in flight

with writer Doug Murray who also flies the air show circuit doing aerobatics in a Pitts Special and a Stampe. Doug had watched Oscar's superb performances and knew that thousands of spectators thrilled to watch the ASW-15 go through its manoeuvres as the theme from "Born Free" was played over the loud speakers.

The idea of making a film was developed and discussed with Ontario Place director, John Maxwell. One of the features at Ontario Place on Toronto's waterfront is Cinesphere, the triodetic theatre where each year from May to October about a million people see spectacular films on

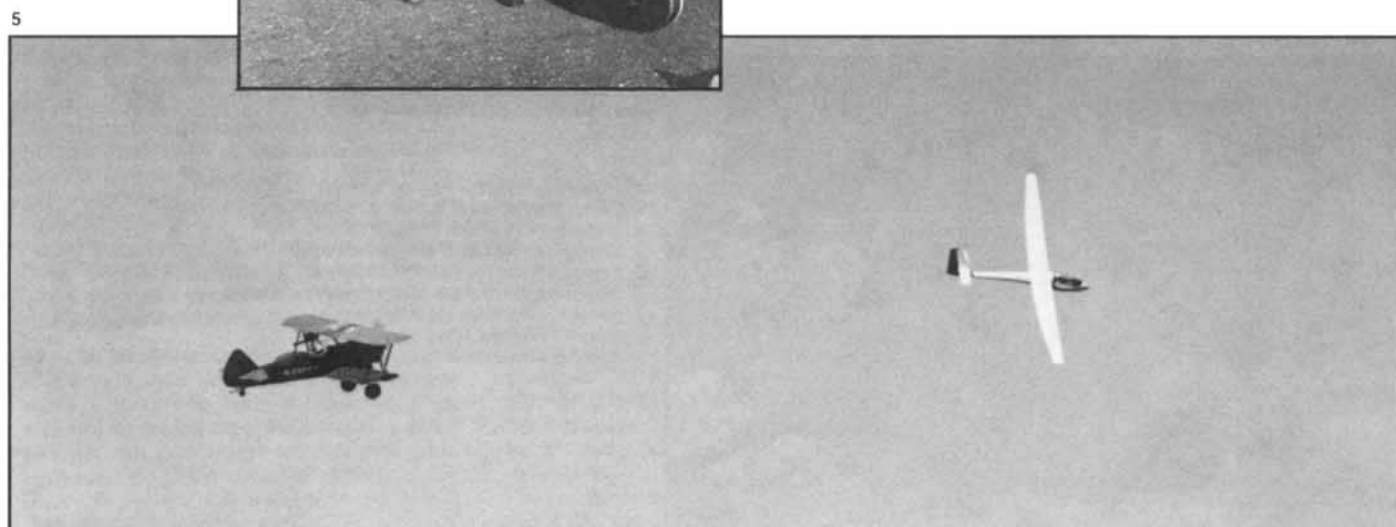
the world's largest indoor screen.

The curved screen has a diameter of 110 feet with an 80 foot spherical radius. The IMAX film is three times the size of the largest format in 70 mm and is coupled with a six track sound system with clusters of 66 speakers; it creates a sense of actually being in the film! Since opening in 1971, Ontario Place has featured a number of outstanding short films with scenic beauty and exciting visual effects to appeal to visitors of all ages and interests.

Last year's gliding season in Canada was over by the time the final decision was



1. Photographer Laszlo George.  
 2. Laszlo George on his "perch".  
 3. Jet Ranger II helicopter.  
 4. Helicopter pilot Ross Reynolds (left) and Oscar Boesch.  
 5. The Stearman and the ASW-15.





1

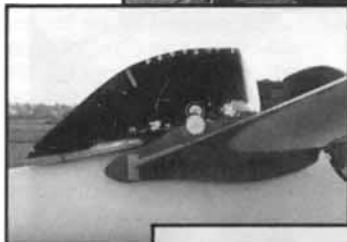
2



3



4



6

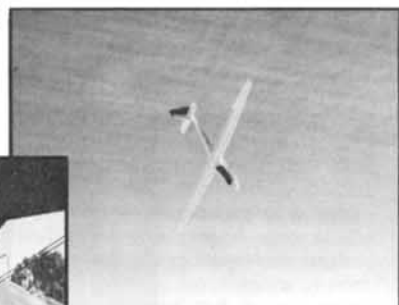
5



7



9



8



1. The camera cuts the glider's performance in half.
2. Oscar Boesch, Laszlo George and Roland Boesch.
3. Preparing the glider with the camera.
4. Special fairings hold the camera box.
5. Frank Tallman lining up his "sights".
6. Mounting the camera to the Stearman's wing.
7. 650 H.P. engine on the Stearman.
8. ASW-15 and two 1-35s.
9. Another scene from "Silent Sky" taken with the IMAX camera.





Another "Silent Sky" performer.

made to go ahead with the project and producer David Mackay and his associate David Keighley had to go where the weather was to get Doug Murray and Laszlo George's story on film.

Some of the shooting was done at Baldwin County Airport near Atlanta but most was shot in California, at Calistoga, Pope Valley, Ocean Ridge and Point Arena; all in an area just north of San Francisco. About 120 flights were needed to get everything that was called for and over three hours of film had to be edited to make the 20 minute "Silent Sky" ... a challenge indeed for the film editor, Ildy Zander.

To fill the giant Cinesphere screen requires a technique that added to the difficulty in the flying by glider and power pilots alike. A wide angle lens is used instead of telephoto resulting in lots of sky and landscape. This means that the camera has to be close to the subject being filmed. To have the glider fill the screen as it often does, the camera has to be really close, which calls for precision flying by the pilot of the aircraft carrying the camera as well as the sailplane pilot. Many of the flying sequences were shot from a Jet Ranger II helicopter with Laszlo standing on the skid. With the cameraman and the 120 pound camera hanging out in the breeze on one side, it was necessary to hang some counter balancing weights on the opposite side to allow pilot Ross Reynolds to manoeuvre his helicopter.

Other shots had to be taken from a more powerful platform because when the ASW-15 put its nose down it pulled away from the helicopter. Stunt pilot, Frank Tallman in a Stearman biplane took over with the IMAX camera counted on his wing. He followed Oscar through rolls and loops sometimes about 20 yards behind with the glider fixed in special "sights" on his wind screen. It's not a happy sound

in a glider to hear the roar of a 650 HP engine not too many feet off your tail!

Jim Indrebo, the manager at Calistoga Soaring Centre was a great help during the shooting along with tow pilots Jess Walls, Ken Slavens, Terry McIlheran and Bart Van Voorhis. There is a sequence where Oscar flies over a couple of 1-35s on a field; one red and one yellow. He is joined a moment later by these two, piloted by Wayne Krebs and Jim Indrebo. The three sailplanes soar and wheel; playing follow the leader close to the ground and along a rocky ridge. The audience feels the excitement and exhilaration that pilots know because they are there!

Some of the countryside below the glider is spectacular; like flying down a river valley or over a rocky shore with breaking waves, and acres of vineyards with irrigation sprays. Oscar says that in that area often there is either forest, mountains or shoreline and all the flat areas are set aside for growing grapes or fruit trees leaving little or no landing fields at all. In spite of these hazards and the number of aircraft used, there were no mishaps throughout the month of filming; a tribute to the safety conscious attitude of these professional pilots.

Frequently a video tape unit was used along with the IMAX camera, so that an immediate check could be made to see the filming results rather than waiting for the film to be developed. Some of the camera mountings were experimental; the shots looking down the glider's wing and forward over the canopy were taken with the big camera mounted on specially made fairings clamped to the glider's wings. This cut the glider's performance in half and created considerable turbulence over the tail which added to Oscar's problems as pilot. In addition to flying the sailplane, he also had to be cameraman and remember to pull a string to remove a

makeshift plastic lens cover which protected the lens from insects during take-off. While Oscar was concerned for the safety of his glider, the cameramen thought only of the \$120,000. IMAX camera; they even kept this part of the shooting till the last day to avoid the risk of losing their expensive camera equipment.

After driving 8400 miles with his son Roland, the trip came to an end and the final work on the film was left to the technicians and the editors. Only one other main ingredient was needed to prepare "Silent Sky" for the Ontario Place audiences ... sound! The Cinesphere sound system is as sophisticated as you can get in a theatre; six tracks and 66 speakers with sound moving from left to right and back again with the movements on the screen. The sound for the film was handled by Manta Sound Studios of Toronto and the music was composed and directed by Hagood Hardy. The musical theme is subtly repeated with different solo instruments picking it up, restating and rephrasing it in time with the glider's movements through the air.

The film starts at dawn with the sailplane on the ground and ends with it flying into the setting sun. You never see it on tow or soaring in a thermal or ridge lift and even though it gets low it always is back up again in the next scene. The purists will say it's a fantasy and they'll be right! It is a fantasy of flight and one that thousands will enjoy because they will know what flying is all about when they experience "Silent Sky".

It started with a glider aerobatic display six years ago and now Oscar Boesch is a movie star. A star who has reached new heights because of his love of flying and the enthusiastic support of all those who helped to make a great new flying film, "Silent Sky".

# the B.C. soaring contest

by Lloyd Bungey and Christine Timm

April 30, May 1, 7 & 8

In 1967 a B.C. Soaring Contest was held at Hope to celebrate the B.C. Centennial. This was made into an annual event but with the site moved to Princeton in years following. In 1974 the contest was not held due to the lack of towplanes in the lower mainland of B.C. In '75 & '76 it was again impractical to have a contest.

This spring, the Vancouver Soaring Association resurrected its tradition of holding an annual contest and sent invitations to all Western Clubs to join them and vie for the bronze Icarus trophy. It was decided not to restrict the flying to contestants only but to combine the contest with a meet to encourage students and others to fly in different surroundings.

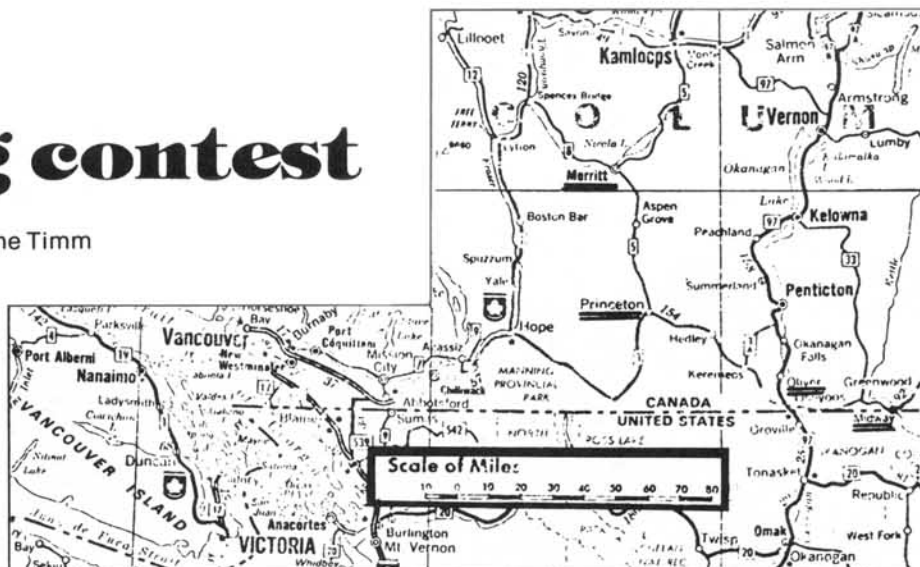
The contest attracted 7 ships, 4 from the V.S.A., 1 from the Okanagan, 1 from Seattle and 1 from Red Deer Alberta. In addition there were a further 7 ships which were not flying in the contest. One of which made a silver C cross-country of 80 miles to Kamloops.

On the first day the task committee were ambitious and set a 166 mile out & return to Midway. Cu's were plentiful as the pilots set out but Oliver proved to be a sink-hole which brought down half the field. Arno Gerlach, Bernie Brayshaw and Paul Kalmar managed to miss the sink and continue on, with Arno almost making it back to Princeton.

The next day, the task was Merritt and return - 94 miles, but since the temperature did not rise sufficiently to trigger reliable convection, most pilots were unable to get away. Klaus Auerbach, however, put all the Canadians to shame by making it to the turnpoint. Late in the day Paul Kalmar managed to get the Pilatus up high enough to glide out on course and earn some points.

The second weekend of the contest did not promise super weather and the tasks were held shorter. On the Saturday a triangle, Princeton - Merritt - Oliver - Princeton, was set but proved to be over-ambitious since overdevelopment brought all contestants down near the first turnpoint.

On Sunday, a pilot's option task was set, either out and return to Merritt or out and return to Oliver - both 94 miles. As it turned out the choice was easy because the cu's development towards Merritt but not towards Oliver. Peter Timm was off early but the later starters had trouble with the cycling of the lift. Peter had completed the task before Bernie Brayshaw finally hooked onto a good one after his sixth relight and headed off on course. Perseverance pays and Bernie made it all the way round to win the day and the contest.



1977 B.C. SOARING CONTEST

## OFFICIAL RESULTS

### Contest Day 1

		Daily		Cumulative	
		Speed	Points	Standing	Points
1.	B. Brayshaw	JA	80.0*	631	(3)
2.	P. Kalmar	ES	124.4*	981	(2)
3.	P. Timm	LR	47.0*	371	(5)
4.	C. Sorenson	ZCJ	63.2*	499	(4)
5.	A. Gerlach	PR	126.8*	1000	(1)
6.	K. Auerbach	4Y	44.3*	349	(6)
7.	K. Holmes	461	15.1*	119	(7)

\* An asterisk indicates miles flown, rather than MPH.

### Contest Day 2

1.	B. Brayshaw	JA	0.0*	0	(3)	631	(4)
2.	P. Kalmar	ES	2.8*	311	(2)	1292	(2)
3.	P. Timm	LR	0.0*	0	(3)	371	(6)
4.	C. Sorenson	ZCJ	0.0*	0	(3)	499	(5)
5.	A. Gerlach	PR	0.0*	0	(3)	1000	(3)
6.	K. Auerbach	4Y	46.0*	1000	(1)	1349	(1)
7.	K. Holmes	461	0.0*	0	(3)	119	(7)

\* An asterisk indicates miles flown, rather than MPH.

### Contest Day 3

1.	B. Brayshaw	JA	46.9*	612	(5)	1243	(5)
2.	P. Kalmar	ES	63.5*	829	(2)	2121	(1)
3.	P. Timm	LR	56.9*	743	(3)	1114	(6)
4.	C. Sorenson	ZCJ	76.6*	1000	(1)	1499	(3)
5.	A. Gerlach	PR	53.5*	699	(4)	1699	(2)
6.	K. Auerbach	4Y	DNC	0	(6)	1349	(4)
7.	K. Holmes	461	DNC	0	(6)	119	(7)

\* An asterisk indicates miles flown, rather than MPH.

### Contest Day 4

1.	B. Brayshaw	JA	58.0	1000	(1)	2243	(1)
2.	P. Kalmar	ES	DNC	0	(4)	2121	(2)
3.	P. Timm	LR	49.2	860	(2)	1974	(3)
4.	C. Sorenson	ZCJ	28.2*	225	(3)	1724	(4)
5.	A. Gerlach	PR	0.0*	0	(4)	1699	(5)
6.	K. Auerbach	4Y	DNC	0	(4)	1349	(6)
7.	K. Holmes	461	DNC	0	(4)	119	(7)

\* An asterisk indicates miles flown, rather than MPH.





Paul Kalmar in the V.S.A. Pilatus



Ken Holmes (Okanagan Soaring Club) in his 1-26



The pilots briefing

Peter Timm in his Phoebeus.



Bernie Brayshaw the contest winner in the rear seat of the Blanik with his "ballast" Leo Reavme.



Cec Sorensen from Red Deer, Alberta with his 1-23.



## THE SOARING BOOK NOOK



# BOOKS BOOKS BOOKS

A GAGGLE OF ONE, Gren Seibels	\$ 9.95
ADVANCED SOARING, Paper	\$5.95 Hard 8.95
AMERICA'S SOARING BOOK, Flying Magazine	12.95
ART & TECHNIQUE OF SOARING, R. Wolters	14.95
AVIATION ART OF FRANK WOOTTON	6.95
BEGINNER'S GUIDE TO SOARING AND HANG GLIDING	5.95
BEGINNING GLIDING, Derek Piggott	12.95
COLOUR GUIDE TO CLOUDS, Scorer/Wexler Paper	4.50
CORRESPONDENCE COURSE & STUDY GUIDE	12.60
F.A.R.'S for Glider Pilots, Ted Bahnsen	2.50
FLIGHT MANUALS FOR SCHWEIZER AIRCRAFT	1-35 4.95
1-26; 1-34; 2-32; 2-33 Sailplanes	1.75
FLYING KNOW HOW, Robert Buck	7.95
FLYING TRAINING IN GLIDERS, A. Welch	3.00
GLASFLUGEL REPAIR MANUAL, U. Hanlo	8.95
GLIDING, Derek Piggott	10.00
HOW TO MAKE AND FLY PAPER AIRPLANES	5.95
INSTANT WEATHER FORECASTING, A. Watts	4.95
LOG BOOKS Small	\$1.00 Large 1.50
NEW SOARING BY THE NUMBERS, S. duPont	3.50
ON QUIET WINGS, J. Lincoln	30.00
ORAL TEST GUIDE, C. McKinnie	2.40
PILOT'S CHOICE, Gren Seibels	6.95

PILOT'S HANDBOOK OF AERO KNOWLEDGE	6.00
PILOT'S WEATHER, A. Welch	9.95
SAILPLANE FLIGHT TRAINING SYLLABUS NEW	2.00
SOARAMERICA Paper	\$6.95 Hard 9.95
SOARING CROSS COUNTRY, Byars & Holbrook	6.95
SOARING FOR DIAMONDS, J. Lincoln	3.95
SOARING METEOROLOGY FOR FORECASTERS, SSA	2.50
SOARING ON THE WIND, J. Lincoln	15.00
SOARSIERRA Paper	\$5.95 Hard 8.95
SPORT FLYING, Flying Magazine	14.95
STAYING SAFE IN SAILPLANES, SSA	2.00
STICK AND RUDDER, W. Langewiesche	9.95
THE GLIDER GANG, Milton Dank NEW	10.95
THE JOY OF SOARING, C. Conway	6.50
THE WEATHER, Sir Graham Sutton Paper	3.95
THEORY OF FLIGHT, R. S. Allen	5.25
THEORY OF MODERN CROSS COUNTRY	5.50
VIEWS FROM THE ARENA, S. Marshall	5.25
WEATHER FLYING, Robert Buck	6.95
WEATHER IN THE WEST, B. R. Anderson	20.00
WINNING ON THE WIND, Paper	\$5.95 Hard 8.95

All orders given immediate and personal attention.

Due to postal increases, please add \$.75 per order.

Canadian orders should be accompanied by  
Bank Draft in U.S. Currency.

Write for our complete book list.

Prices subject to change without notice.

Dealer inquiries welcome.

### BLACK FOREST GLIDER PORT

9990 Gliderport Road, Colorado Springs, Co. 80908

Phone (303) 495-4144



# COMMITTEES and CHAIRMEN 1977

## AIR CADET LIAISON

Mr. Hank Bruhlman,  
561 Lacroix St.,  
Chatham, Ont. N7M 2X1

## AIR SPACE

Mr. Bruce M. Hea,  
1528 - 23rd St. N. W.,  
Calgary, Alta.

## F.A.I. AWARDS

Mr. Ray Wilson,  
Box 971,  
Kingston, Ont. K7L 4X8

## F.A.I. RECORDS

Dr. & Mrs. Russell W. Flint,  
96 Harvard Ave.,  
Winnipeg, Man. R3M 0K4

## FREE FLIGHT

Mr. R. F. Nancarrow,  
43 Sealcove Drive,  
Etobicoke, Ont. M9C 2C7  
Members: Mr. J. Bachynski  
Mr. C. Villanyi-Bokor,  
Mr. L. Bungey  
Mr. Mark Perry  
Mr. Peter Masak

## HISTORIAN

Mr. A. N. leCheminant,  
Box 168, R. R. 3,  
Manotick, Ont. KOA 2N0

## INSTRUCTORS

Mr. I. Oldaker,  
30 Prescott Cres.,  
Pinawa, Man. ROE 1L0

## INSURANCE

Mr. A. O. Schreiter,  
3298 Lone Feather Cres.,  
Mississauga, Ont. L4Y 3G5

## MEDICAL

Dr. E. A. Mortis,  
1123 Beverley Blvd., S.W.,  
Calgary, Alta. T2V 2C4  
Member: Dr. W. Leers

## PUBLICITY

Mr. John Brennan,  
116 Tangle Briarway,  
Willowdale, Ont.

## RADIO

Mr. C. F. Pattenson,  
14 Davidson Drive,  
Ottawa, Ont. K1J 7L9

## SAFETY

Mr. F. M. Harris,  
3521 Ashcroft Cres.,  
Mississauga, Ont. L5C 2E6  
Members: C. Pederson  
A. N. leCheminant

## SPORTING

Mr. J. Firth,  
542 Coronation Ave.,  
Ottawa, Ont. K1G 0M4

## TECHNICAL

Mr. J. Henry,  
3151 Ste. Rose Blvd.,  
Montreal, P.Q. H7R 1T7  
Acting Chairman:  
Mr. T. R. Beasley  
Member: Mr. D. Band

## TROPHIES & STATISTICS

Mr. R. C. Gairns,  
130 St. Francis Blvd.,  
Chateauguay, P.Q. J6J 1Y1  
Member: Mr. A. Sawatsky

## WORLD CONTEST 1978

Volunteer required.

## SEEDING RULES

Mr. B. M. Hea,  
1528 - 23rd St. N. W.,  
Calgary, Alta.

## METEOROLOGICAL CONSULTANT

Dr. Sepp Froeschl,  
1845 Brookdale Ave.,  
Dorval, P.Q.

**Glider pilot  
made pass,  
woman says**

DURBAN (Reuter) — A woman has told a South African court that a hang-glider pilot flew over and made a sexual suggestion to her as she was sunbathing nude on the roof of her garage. Loran Thompson was testifying in the trial of her husband, Francis, 68, who has pleaded not guilty to the attempted murder of two hang-glider pilots by firing at them with an air rifle. She said she had complained to police many times about the activities of hang-gliders. The trial is continuing.

**Firmal  
Electronics**  
Sales and Service for

**The  
Cambridge  
Variometer  
System**

Vario (fpm, Kts or mps); Mk II Audio (lift and sink); T.E. probe, detachable with socket, water trap & tubing; Gust Filter and On/Off tap with installation instructions - \$333. Add a Speed Director - \$570.  
+ Other instruments in stock.  
ASI's, ALT's and T & S's.

**TWO YEAR GUARANTEE & SERVICING ON ALL ITEMS**

**Firmal Electronics, Box 8046  
Ottawa (613) 731-6997**

## Notes from the President

Perhaps the weather had something to do with it. In most parts of the country soaring weather arrived early and in large quantities. We also had the worst rash of accidents in many a year, and unfortunately two of our members and one non-member were killed in soaring accidents in the first four weeks of the season. Five additional accidents were reported to the insurance company by the end of May.

One has to be careful not to jump to conclusions and blame the pilots, the instructors, the system etc. Unfortunately, accidents will happen. On the other hand, we must look at each accident very carefully and try to determine how to avoid similar accidents in the future. Most of the accidents have one common feature. They don't just happen as one single act of God. They usually consist of a number of small, insignificant errors which suddenly combine into a large disaster. For instance, flying slow is not necessarily bad, having an inaccurate ASI is not necessarily bad, not practicing spin recovery is bad but common, not knowing the spin characteristics of one's aircraft is bad but too common. Nothing will happen for perhaps a very long time. But some gusty day halfway through the downwind leg ---.

Let me suggest that all of us go back to basic good sense and follow all the rules all the time. Let me suggest to CFI's and instructors that being nice guys is not enough. There are people who want to regulate us even more, let's not give them any excuses.

Now the good news. SAC has been officially approved as a Canadian Amateur Athletic Association and can receive deductible donations as of January 1, 1977. If anyone has any spare cash, send it to Terry Tucker and she'll issue a tax receipt. The late Elemer Balint's family has kindly set up an endowment fund in memory of Elemer, and this fund is large enough (approx. \$1,000. at last count) to provide a nice prize for the Canadian pilot who shows best results at future World Championships. On behalf of SAC I want to thank Mrs. Balint for her generosity. We hope to see many of you at the Nationals in Hawkesbury. The Montreal Soaring Council has put many hours of hard work into the preparation of this important event. The Toronto area clubs held a very successful fund raising event for the World Contest Fund and came up with about \$2,000. If any of you are in Toronto this summer be sure to go to Ontario Place and see the greatest soaring movie ever made. Oscar Boesch and his ASW-15 are the stars.

Happy Soaring,

A. O. Schreiter



# Appointment in Arizona

"See the Classic Car Museum"

"Have you ever tried Soaring?"

The last one stopped me. Like a lot of other people, the idea of Soaring always intrigued me, but when do you ever get an opportunity to do it?

I had just checked into the Sheraton Scottsdale Hotel, just outside of Phoenix, Arizona. We were there to do some fashion photography; and when the light starts to fail around 4:00 to 4:30 p.m. the rest of the time is free to do as you please.

You guessed it. I called and made an appointment for an Intro. at 5:30 p.m.

I arrived at a place called Turf Soaring School, which you have to describe as being in the desert. No grass or vegetation other than Cactus and desert brush to be seen.

The offices were a roof supported by four corner posts. One section contained about a dozen hopeful pilots, waiting for either customers or thermals, I don't know which, and another smaller section with a counter and the obvious owner taking care of the paperwork.

I arrange my Intro. and was escorted to a Blanik. I posed beside it for a few pictures which a friend who had accompanied me took, I suppose in case I was never seen again.

Next, a very young chap approached me and introduced himself as Cory Miller. I immediately assumed he was to run the wing as he was too young to be a pilot. He helped me to get strapped in and during this procedure I asked him if he was the pilot?

He said he was the pilot, I gulped and said something brilliant like - "terrific."

We were all strapped in and set to go, the signal was given to the wing man, the slack was taken up, we started to move and as soon as the wheel left the ground, -- "I was hooked!"

While we were being towed up, Cory explained to me all the controls and instruments; he also pointed out the yellow handle which he was going to ask me to pull for release at 3,500 feet. The next thing he pointed out was a little sign in the centre of the instrument panel which said simply "RELAX".

By now I was convinced that Cory was a very experienced young man, at least his actions and tone of voice indicated to me, I was in good hands.

At 3,500 feet Cory asked me to pull the "T" handle for release.

The thought went through my mind that it was like setting off a charge of dynamite, but nothing like that really happened. The tow rope snapped away. We banked to the right, as the tow plane went left and we were now in that state of suspended animation that you all know so well.

To Cory's credit, he now let me put the Blanik through manoeuvres which it probably was never designed to do, but I settled it down to going right and left, up and down, continuously for about ten minutes.

In the clear desert air I saw Scottsdale and Phoenix to the south as we flew over the reddish mountains and desert.

The feeling of being turned loose to compete or comply with nature was there, and we finally but reluctantly turned back to the airport.

Cory allowed me to bring the Blanik back into the Circuit and when we approached the Base leg, he said he would take over, which he did and landed with a rolling stop which put us within 6 feet of where the Blanik is normally parked.

That was my introduction to Soaring and needless to say I was completely exhilarated by the experience so when I arrived back in Toronto, it was all I could talk about, and that was what eventually led me to C.O.S.A.

That is another story but in the meantime — Thanks, Cory for introducing me to another world.

# Someday you fly alone .

One of the problems encountered while learning to fly is the absolute knowledge that one day your instructor is going to leave you in the cockpit and say, "O.K. Bert, this time you're going alone."

How did it feel and what were the circumstances of my first solo?

First of all it didn't come as a complete surprise, because whether the instructors realize it or not, the questions they ask just before solo are a giveaway.

"Do you have your Student Permit yet?"

"Have you had your medical?"

"Are there any procedures in the circuit and landing pattern that you are not familiar with?"

"Have you done a simulated rope break?"

"Wave off?"

"Box the wake?"

Yes, these are tipoffs that solo is not too far away. Perhaps that is good because it serves to insulate you from the shock when it finally does happen. A shock? — For me yes — for you — perhaps not.

One late afternoon, an hour before sunset at an airport outside of San Diego, California, I went up with my instructor, Ted Steckbauer for another instructional flight in a 2-33, and everything went well, and after I landed it and rolled to a stop, he got out and started securing his safety harness in the back seat.

By the time I said "Shall I get out now?" he was putting the canopy down and just before he closed it he said, "No, you're going alone this time." and his last, not so comforting words said with a smile were, "Don't rack it up on me."

Now the juices began to flow — the blood inside me rushing here and there — things pounding and pulsating inside my body that I never knew existed.

Exaggeration you say — Not at all, everything inside me was in a turmoil, but strangely, outside I was completely calm, confident, with steady hands and clear thoughts about what I was about to do.

The tow-rope was hooked up, the wing man ready. I gave the O.K. signal to the wingman, he raised the wing and when the tow-plane waggled it's rudder, I said to myself silently, "Here we go," as I waggled my rudder in answer, "Clear to go."

We had a routine take-off and in fact, I was so concerned about not making a mistake, I'll probably never fly a tighter formation with a tow-plane. The tow-rope looked like it was frozen.

At 2000' A.G.L. I took one deep breath, pulled the release twice, watched the tow-rope snake away, then banked gently right as I watched the tow-plane separate to the left and down.

Now I had a chance to relax and orient myself to the landmarks and enjoy the view. The grin must have been from ear to ear as I heard unspoken words saying, "I'm really flying by myself", I'm actually doing it", This is the greatest."

It was about then, that I noticed my right palm was wet. I changed hands on the stick and

# ou will

wiped my palm dry on my pant leg.

Funny, that never happened to me before.

The airport was called "Brown Field right beside Tijauna, Mexico, and you had to be careful not to cross the border. I looked down at Tijauna and its surroundings hills, west to the Pacific Ocean and east to the mountains of the High Sierras. Up the coast there was a clear view of the beautiful city of San Diego. I exhilarated in the golden beauty all around me as the sun was now very low on the horizon.

All week I had been using air to tower radio and was now fairly well accustomed to the procedure.

As I was now at the altitude to join the "Initial Point of Entry" for the circuit, I called —

"Brown Tower — Glider 2655 Hotel — approaching South West for landing."

"2655 Hotel, you are cleared to land on 26 RIGHT!"

I was shocked into stunned silence. All week I had been landing on 26 LEFT! I didn't know where 26 RIGHT was, let alone what the change in circuit might be to land on it!

Someone down below must have interpreted my silence accurately, because, (as I wiped my right palm dry again) the next words I heard were —

"2655 Hotel — 26 RIGHT is a lighted runway — 26 LEFT is not — recommend you land on 26 RIGHT as the daylight is fading. It is now at the pilot's discretion which runway he uses."

There was an audible sigh of relief from inside that glider. As I could see 26 LEFT very clearly, I answered —

"Brown Tower — 55 Hotel requests landing on 26 LEFT."

"55 Hotel — request granted — clear to land on 26 LEFT."

At least I was back on familiar territory again, but I still had to land the plane.

At 1000' I was over a pond which was the "I.P." and I radioed —

"Brown Tower — 55 Hotel over the "I.P."

"55 Hotel — clear to land."

"Roger — 55 Hotel."

Now I was in the circuit — Air speed 55 — check spoilers — everything was looking right — no more surprises please — (wipe my palm again). Left bank now, onto base leg — looks good — maybe a little high — spoilers out — left bank for final — speed O.K. — still high — side slip — that's better — O.K. straighten out — 5 feet off deck — flare out — touch down — damn, I bounced it — let it settle — touch again and it stays — roll out to park off runway — looks good — now rudder to run off runway — brakes — wing down — stopped!

Now I see five men with outstretched right hands coming at me for congratulations, and their smiles are as wide as mine.

My first solo is over and I will never forget even the most insignificant part of it, as it marks a day in my life when I realize an important accomplishment, with the unfailing help of all the instructors who brought me to this point.

Now that I have soloed I can concentrate on learning to fly.

## ... but it's not just the flying

In those few short moments when you first wake up and realize - this is a flying day, there is a glow of anticipation which cannot be equalled.

This is not a day at the office -- or -- even just a day away from the office.

This is a flying day!

It's not a day for shopping or picnicking or going to the zoo.

This is a flying day!

The expectancy of what the day will bring makes it special.

Since gliding clubs are run only by the combined efforts of its members, and not by paid airport staff, you prepare to spend the entire day at the field. To arrive for your flight and leave immediately after (except in rare circumstances) is not done.

You fly because you help others to fly.

The preparations for the day are also part of the fun of flying.

You prepare your lunch and thermos of tea, special tidbits to last throughout the day. You make sure you have warm enough clothes and your knapsack with all your papers pertinent to flying, especially your log book.

The drive to the airport is a different drive than going almost anywhere else. You think flying all the way. You study the weather, the sky, the clouds and the wind.

You see a hawk circling in a thermal and think "Move over, I'll soon be up there with you."

As you go over rises and dips in the road, you put small pressures on the steering wheel of your car, similar to the pressures you will soon be applying to the stick when you're flying. You don't ordinarily drive like that. Only on flying days.

You look around at the other cars, heading in all directions, and wonder - how many are going flying? Probably not many. Perhaps none. You're the only one out of all those people. Do they know what they are missing?

Now you arrive at the airport. The airport? Well O.K. it's part of a farmer's field. Corn and wheat are growing everywhere, except for the narrow grass strip we call a runway. But it has a special look and a special smell. It looks warm and green and growing and smells of vegetation and life. Not like your modern airport with its sterile, dead level, black top runway surrounded by buildings and concrete and mixed with the smell of burnt rubber, gasoline, grease and oil.

Our runway has character.

It slopes down from both ends to the middle. Very unusual.

Our control towers (if I may call them that) are wooden sheds at each end of the runway. The hanger is a corrugated tin building with sliding doors, and as I turn into the dirt lane, I see three members already taking the 2-22 out of the hanger. A wave in greeting, I park the car and am immediately one of the work crew.

There is even something special about moving an aircraft on the ground. It is out of its element. It needs special care and delicate handling. It is a helpless sculpture of bones showing through the drum-tight skin of its surfaces. But when it is released into its own element, it actually comes alive. It does! I see it happen everytime I go up.

What once were dead and lifeless wings on the ground, now throb with a powerful urge to lift you up and away.

Control surfaces, which on the ground are merely hinged panels with no meaning, suddenly have the ability to move you at the slightest touch to places in the sky you want to go.

The planes are now at the starting point on the runway, and the tow-plane is up taking its check flight. Spiralling lazily and checking itself to swoop up and climb. After all week in the hanger it's clearing its throat and loosening its bones for the long days work ahead.

Serious faced pilots, doing pre-flight inspections are studying every inch of the gliders for possible imperfections.

Now the flying day actually begins.

A series of hook-ups, signals, recording times, waiting, talking, learning, soaking up sun, running wings, until your turn comes to fly.

Now the icing on the cake, the whipped cream on the pie, the pièce de résistance - flight itself - now you can go with the hawk of the morning - enter another dimension - feel the glider come to life -- ... but it's not just the flying.

---

# CLUB NEWS

---



**John Bachynski, Club News Associate**  
Editor of FREE FLIGHT loading up his 1-35. John says there are a number of clubs he hasn't heard from, so how about having someone in your club write to John and tell us about the activities at your glider field.

---

## Cu-Nim Gliding Club

The Cu-Nim Gliding Club operates from Black Diamond, about 35 miles southwest of Calgary, in the picturesque Sheep River Valley. To the west of our airfield are the rolling foothills rising to the front ranges of the Rockies.

For the adventuresome pilot, there are usually thermals being generated out over the hills. Other pilots prefer to fly off to the southeast, where the broad flat prairie offers a multitude of landing places for those who decide they cannot make it home.

The club line-up of aircraft consists of a Citabria tow-plane, a Blanik and a 2-33 for training, plus a newly purchased

Schweizer 1-23 for more advanced solo pilots. Also sharing the field are ten privately owned gliders, ranging in performance from a 1-26 to an ASW-12. Hopefully, we will also see flying from our airfield this summer an HP-18, which one of our members is in the process of completing in his basement. There will also be a second ASW-19, to accompany C-GGRM which arrived last year. This year we will be operating off our new 3000' grass runway.

We have just completed our annual May long weekend contest, for all western pilots, which has been held regularly at Innisfail for some 15 years. This meet saw

most of the private ships from Cu-Nim competing. A great deal of interest was also shown by a number of students who turned up to help run the contest.

The next major event planned is the Cowley Summer Camp, to be held during the last week of July. At this time, all the Cu-Nim operations are moved to the Cowley airfield. This camp is attended by pilots from soaring clubs all over western Canada. Hopefully some of you will be able to come to Cowley this summer.

Michael McBryan  
Secretary



# CLUB NEWS (continued)

## Lahr Gliding Club

Boxing Day brought to a close the 1976 flying season for the Lahr Gliding Club. It was a season filled with many frustrating problems and delays for us but most were eventually overcome to make for a reasonably successful, if rather low key, year of flying.

The club's private fleet grew by leaps and bounds during the year with the arrival of Bill McArthur's L-Spatz 55 in April, Jim Oke's Cirrus 75 in August, and Bill Barnes's Zugvogel III in November. The proud new owners are now all well at home in their aircraft and are waiting impatiently for the

start of the cross-country season.

Winters in the Rhine valley consist mostly of rain and fog, so year round flying is fairly practical. Late February saw our first flights of 1977 and a few weeks later CFI Dan Webber was up for over four hours in the club Ka 6 to officially open the soaring season.

As this is our first appearance in Free Flight for some time, a few words about the Lahr Gliding Club are perhaps in order. Our membership consists of military and civilian personnel and their dependants

who are stationed in Europe with the Canadian Armed Forces. Our usual operating site is the Lahr NATO Airfield near Lahr in Schwarzwald, West Germany (or about one hour south from Karlsruhe by autobahn). We consider ourselves very fortunate to have a very beautiful flying area, the famous Black Forest of Southern Germany. Naturally, any Canadian glider pilots planning a European vacation this summer are invited to pay us a visit and perhaps enjoy a flight and some of the excellent local white wine.

## The May Meet '77

by Kevin Churchill & John Bachynski

Traditionally, the soaring clubs of Alberta get together each May long week-end for an informal cross-country competition and social get-together. This year, four days of rain preceeded the contest, but on Saturday, May 21st, fourteen sailplanes lined the sunny airstrip at Innisfail.

The contest director, George Dunbar, set the task for Day 1 to be a 175 km. triangle. The centre of the triangle was a series of lakes and hilly terrain which proved to be the main area of strong sink and occasional rainstorms.

Pilots reported good lift up to 8 knots and cloudbases at 10,500 feet. Of the seven finishers, Dick Mamini with his ASW-12 came in first closely followed by Willi Krug in his modified open Cirrus. Mike McBryan and his newly acquired 1-23 did extremely well for his first cross-country attempt, accomplishing 54.5 km. However, using a handicap system, Lee Coates in his SF-26 was the winner and Dave Marsden completed the task, landing after 7:00 p.m.

Day 2 was cold and rainy but this did not dampen the enthusiasm of the congregation. Many local soaring flights were made when no task was declared. The hospitality of two Edmonton Club Blanik owners and the training flights of Calgary's Bergfalke kept the tow planes busy.

On Day 3 overnight conditions improved dramatically and the forecast was for strong thermals. After much deliberation and in expectation of a booming day, a task of 332.8 km. was



George Dunbar (centre) computer expert and President of the Alberta Soaring Council

Bill Pidruchney (V.A.M. Ukrainian Air Force) gave a dazzling display of take-off procedures in the Edmonton Soaring Club's 1-23



# CLUB NEWS (continued)



Colonel John Bachynski completed his "Silver C" with a 5 1/2 hour flight and 170 km. distance



Smiling and handsome winner Dick Mamini relaxes in the cockpit of his ASW-12.

set.

The first and last legs were set more or less down wind so that early starting pilots in ships of moderate performance would not have to fight a headwind in weak lift.

Starts began as early as 11:30 a.m. Some pilots reported lift as strong as 8 knots. However most reported weaker lift and extremely turbulent thermals. Some pilots were unable to get as high as the startgate and there were four DNC's.

Pilots on course reported no problems on the first leg. However, over development caused some pilots difficulty on the 2nd leg.

Poor conditions on the third leg necessitated a dog leg course. Dick Mamini finished the course in 4:20 after a final glide of some 20 miles through dead air.

The hard luck story of the day was made by Willi Krug, arriving over Red Deer some 15 minutes after Mimini. He contacted the same lift, which was now west of Red Deer over Sylvan Lake, almost due north of the field. Climbing slowly to 3000' after dumping his water, he started a final glide of 15 miles into a quartering head-wind from an altitude of only 3000' over the field. It was not enough. The glide ended 1 mile north of the field as spectators on the finish line watched him drop from sight behind a small line of trees.

Winner over all was Dick Mamini who picked up a digital watch for his trouble. Standard Class was won by Bruce Hea in his Libelle, Sports Class by Lee Coates and Rych Ryll in their SF-26.

## 1977 MAY MEET SPONSORED BY THE ALBERTA SOARING COUNCIL INNISFAIL AIRPORT, ALBERTA

### Combined Classes

Day 1 May 21, 1977 ... Preliminary

Daily task is - Triangle

Turnpoints are: Innisfail; Delburne; Three Hills;

Daily derating factor = 1

Task Distance = 175.16 km

Name	Glider	Speed KPH	Distance KM.	Daily Points	Daily Standing	Total Pts.	Total Standing
Coates/Ryll	SF-26	SIG	52.1	886	1	884	1
Mamini, Dick	ASW-12	ASW	94.2	860	2	860	2
Krug, Willi	KW-45	SNZ	76.4	852	3	852	2
Riegert, Larry	Cirrus	XGU	67.6	788	4	788	4
Marsden/Jones	Gemini	TKC	59.2	728	5	728	5
Matthews, Rick	ASW-19	GGRM	56.9	711	6	711	6
Sorensen, Cec	1-23	ZCJ	124.0	526	7	526	7
Hea, Bruce	Libelle	QJS	141.0	515	8	515	8
Zwarych, Chester	1-23	XKL	109.0	446	9	446	9
Parkinson/Dunbar	Dart	OAK	114.5	413	10	413	10
Bachynski, John	1-35	WTI	64.0	170	11	170	11
McBryan, Mike	1-23	ZDO	54.5	157	12	157	12
McPhee/Norgard	Blanik	TVT	20.0	0	13	0	13

Day 2 May 23, 1977 ... Preliminary (3)

Daily task is - Triangle

Turnpoints are: Innisfail; Winfield; Stettler;

Daily derating factor = 1

Task Distance = 332.75 km

Name	Glider	Speed KPH	Distance KM.	Daily Points	Daily Standing	Total Pts.	Total Standing
Mamini, Dick	ASW-12	ASW	76.8	860	1	1720	1
Krug, Willi	KW-45	SNZ	300.5	827	2	1679	2
Riegert, Larry	Cirrus	XGU	226.5	545	4	1333	3
Coates/Ryll	SF-26	SIG	118.0	329	7	1213	4
Marsden/Jones	Gemini	TKC	169.0	390	6	1118	5
Hea, Bruce	Libelle	QJS	237.0	597	3	1112	6
Matthews, Rick	ASW-19	GGRM	0.0	0	8	711	7
Bachynski, John	1-35	WTI	170.0	400	5	570	8
Sorensen, Cec	1-23	ZCJ	DNC	0	8	526	9
Zwarych, Chester	1-23	XKL	DNC	0	8	446	10
Parkinson/Dunbar	Dart	OAK	0.0	0	8	413	11
McBryan, Mike	1-23	ZDO	0.0	0	8	157	12
McPhee/Norgard	Blanik	TVT	0.0	0	8	0	13

# A Great Ship and a Delight to Fly



## Available now for 1977 season

PIK-20B 90° flaps - USA allows timer on flaps for use in restricted 15 m class.

PIK-20D Flaps and spoilers - lock flaps for use in restricted 15 m class. Elevator trim interconnected with flap setting.

### Watch For

PIK-20E Motor Glider - retractable, electric start engine.

## Technical Data PIK-20D

Span	15.0 m
Aspect Ratio	22.5
Empty Weight	220.0 kg
Max. Weight	450.0 kg
Water Ballast	140.0 kg max.
Wing Loading	30 - 45 kg/m <sup>2</sup>
Load Factor	+ 7.1 to -5.1
Best L/D	42 @ 108 km/h
Min. Sink	.63 m/s @ 85 km/h
Stall Speed	60 km/h @ 300 kg
Max. Speed	262 km/h

For further information please contact:

**George Couser,**  
735 Riviere aux Pins,  
Boucherville, Quebec, J4B 3A8  
(514) 655-1801



## The Pilatus B-4

- Sailplane single seater
- All metal standard class (15 meters)
- High performance (L/D 35:1 at 53 mph)
- Aerobatic
- A pleasure to fly
- Ideal for club and private use
- Competitive price
- Short delivery (monthly production: 12 units)
- Canadian type cert. No. G-96
- Demonstrator available for test flight (mid April / mid Nov.)

Made by  
**PILATUS AIRCRAFT LTD.**  
Stans - Switzerland,  
Builders of World renown STOL  
"PILATUS PORTER"

OFFICIAL AGENT FOR  
CANADA  
PIERRE ROCHETTE  
C.P. 1543 Terminus, Quebec  
G1K 7H6  
Tel: 418-529-4164 Office  
Tel: 418-651-2939 Residence



# CLUB SUPPLIES

ITEM NO	DESCRIPTION	PRICE
1.	F.A.I. Soaring Badges - "A" & "B"	
	a) Button - Screw Back	\$5.25
	b) Pin - Safety Catch	5.75
2.	F.A.I. Gliding Certificates & Badges:	
	a) Application Forms for Certificates & Badges	
	Claims are available from Club C.F.I.	n/c
	b) Gliding Certificates - S.A.C. Member	5.00
	Non Member	18.00
	c) Badge - "C" (button or pin)	6.00
	d) Badge - Silver "C"	11.00
	e) Badge - Gold "C"	42.00
3.	F.A.I. Soaring Awards & Rules Booklet	5/\$1.00 or .25 ea.
4.	F.A.I. Sporting Code (English or French)	1.50
5.	S.A.C. Instruction Manuals:	
	a) Part I - Instructor's Guide	.75
	b) Part II - Air Instruction Notes	.50
	c) Part III - Student Notes	1.00
	d) Air Cards - set of 11 plastic laminated cards (8 x 5)	3.00
6.	S.A.C. Tephigram & Weather Briefing Booklet	5/\$1.00 or .25 ea.
7.	Weather Briefing Form N-052 (8 1/2 x 11 sheet)	n/c
8.	Application for Official Observer	n/c
9.	S.A.C. Blazer Crest (Navy Blue)	9.00
10.	S.A.C. Decal	.25 ea.
11.	S.A.C. Cap (Red, Green or Blue with white crest)	4.00
12.	S.A.C. Glider Pilot Log Book	
	a) single copy	2.25
	b) 25 or more	2.00
13.	F.A.I. Cloth Badges - 3" diameter	
	a) "C"	.75
	b) Silver or Gold	1.50

## NOTES:

- Item 2 (b, c, d or e) available only from Mr. R. Wilson, Chairman of F.A.I. Awards, Box 971, Kingston, Ont. K7L 4X8
- All other items available from Box 1173, Station B, Ottawa, Ont. K1P 5A0 or Mrs. T. Tucker, 786 Chapman Blvd., Ottawa, Ont. K1G 1T9.
- All cheques payable to S.A.C.

FOR NEW AND

USED SAILPLANES, INSTRUMENTS,

RADIOS, ETC.



BRITAM AVIATION

CANADIAN SCHWEIZER DEALER  
Box 660 Station 'Q' Toronto, Ontario M4T 2N5  
Telephone DAY: 416-925-5571 NIGHT: 223-6487  
FIELD OFFICE AT ARTHUR GLIDER PORT. 18 MILES  
WEST OF ORANGEVILLE ON SOUTHSIDE OF HWY. NO. 9

# BADGE FLYING NEEDS THOUGHT

by Lloyd Bungey

Every soaring season sees soaring pilots heading out in high hopes of making 50 km, 300 km and 500 km flights. Some succeed, many don't. Those who don't may fall short due to bad flying, bad luck, bad weather or just plain bad preparation. It is to help this last group that the following hints are written.

While bad preparation covers a multitude of evils; such as forgetting to turn on your barograph (I know all about this one), forgetting your maps or your cameras or a hundred and one other things. The preparation I wish to talk about is a little more abstract than that; it's mental preparation.

O.K. you've learnt how to fly, you know how to stay up in a thermal, your out-landing techniques are good, and you've read all the books, now you're ready, right? No, wrong! You haven't really considered the task!

To fly 50 km and give yourself the best chance of completing it, you don't have to fly like a champion. But if you have 50 km then you will probably need to do things differently for the 300; and if you go on for the 500 it's different again. Each task needs a slightly different approach. We shall consider each in turn.

## The 50 km Silver "C" Distance

This is the starting point. Possibly it's the first time you have been more than a straight glide away from the home field; however there is no need to get nervous about it; just get nice and high before setting off. This serves two purposes. First, it gives you plenty of time to get over your nervousness before there is any real necessity to start planning a landing. Secondly, you give yourself the best chance of catching another thermal.

Although it helps to know where you are going, if you get lost is probably isn't too serious; that is provided you have plenty of open country around. Just keep going for a couple of hours until you are sure you have flown far enough. I've known several pilots who got their Silver "C" with flights where they were lost after the first ten miles. They just kept going down wind.

This raises another point. Provided there are no restrictions (bad terrain, control zones, etc.) then go down wind. In a 10 mph wind you can drift Silver "C" distance in 3 1/2 hours.

As far as flying like a contest champ, why bother? The need is not there. Work the thermals right to the top and set off with the MacCready ring set for zero. If you have no MacCready ring then fly a bit faster than best L/D (to allow for subsidence between thermals). You are in no hurry. Provided you can soar for about two hours you should make the distance.

## The 300 km Gold "C" Distance

This is a task which can be done two ways - combined with a Diamond Goal attempt or on its own. Personally, I don't see why anyone would want to not combine it with a Diamond Goal attempt since it keeps the retrieve shorter to do it this way. However it's your choice.

Once you have your course planned you should consider your probable conditions and your ship's performance. If possible find the time to calculate what your average speed should be. Dick Johnson uses a rule of thumb that sink is 20% of the lift obtained on the way up to calculate his speed. If you carry out such a calculation you can figure out roughly how long you should take under any given conditions. This will determine how you should fly.

If the length of time you estimate for flying the 300 km is close to the length of the thermalling period of the day then you have no safety margin and you should treat it like a 500 km. If, however, you have a high performance ship (Ka-6 or better) then you will probably have some time in hand. We shall consider this case since the other case will be treated under 500 km flights.

First, because you have some time to spare, there is no great panic to leave the field in marginal conditions. Wait until you are sure you can stay up, then set off briskly. All your flying should be done following MacCready's principles to maximize your speed. You are in a race, but only against the clock; so don't push too hard. So long as you are back before the thermals stop, you're laughing.

Make sure, however, that you know where you are and where you are going at all times. You will lose far too much time finding yourself again if you get lost. For this flight (and the 500) navigation is important.

Don't necessarily ride thermals to the top. Leave them if they weaken (provided you are already at a reasonable height). With some time to spare on the task you can afford a few errors such as staying in the odd thermal too long, deviating from track a little, even backtracking if it seems desirable; but don't allow yourself to waste too much time. Have a time-table worked out so you know where you should be at any given time then you will have a good idea of whether you will make it or not.

Given a reasonable day, a reasonable ship and reasonable luck, you should have success in this one if you have the abilities required. After the flight (even an unsuccessful one), analyse your performance and compare your times with your theoretical times for such a day. If you haven't taken more than an hour extra, you are probably in good shape. After all you were playing it safe on this one; you wanted to make it.

## The 500 km Diamond Distance

This one is the toughie, especially in weak conditions (such as we usually meet in Canada). It can be done as a downwind dash (an excellent idea if the wind is strong) but as I said before I hate long retrieves. So we will consider the strategy for an out and return or triangle (which usually results in more shorter retrieves).

First, unless you have a real supership, or get a really stupendous day, your time to

fly such a course will probably be so close to the available soaring time as to make playing it safe impossible. You will lose time anyway through little mistakes, so whatever margin you had to start with will go without throwing it away deliberately.

As you have no time to spare, get going off the first thermal that gives promise of there being enough to keep you aloft. If you wait until you are certain you can stay up, you will be away too late. If you land out 10 miles away, tough luck; at least you tried to give yourself a chance. You may have to tippy-toe along for a while but every mile you make before the day starts booming is one less you will have to tippy-toe at the end of the day when you will be tired and your flying sloppy.

Once the day starts to boom, however, get cracking! There is only one speed to fly — optimum. The day is too short for anything else. Don't be too optimistic in setting your MacCready ring, but don't be pessimistic either. And don't deviate too much from course and never backtrack. At 60 miles an hour a one mile backtrack costs you two minutes plus. One minute going, one minute coming back plus some time for thermalling back the height you lost. Remember, a straight line is the shortest distance between two points so the only deviations you should make are to get better lift or to stay away from sink and then only if the deviation is not too great. Shortcuts are permitted but only if you also get your turnpoint photos.

Be prepared to change tactics if necessary. You must recognize immediately when conditions change so that you can slow down to stay up, if needed. 500 km is a long haul and the conditions can be quite uneven along the way. If you don't recognize the duff spots you can lose a lot of time recovering from low down when 500 feet gained by slowing down earlier would have put you in twice as strong lift.

The other necessities are much the same as for a 300 km flight: namely, don't get lost, try to keep to a time-table (this helps you to try a little harder) and leave the thermals as they start to weaken (but be sure it's the thermal, not your sloppy flying). However there are a few other things, such as eating a little and drinking a little to stay nourished and avoid dehydration which are of importance over 500 km. The key to this one though is not to waste any time. Start early, go fast, and don't quit until forced to. With luck an early start will see you far enough along, that by the time the day dies, you will be almost home and the distance which remains (60 miles or so) can be made in a straight glide interrupted by a nibble here and a nibble there.

Yes, it's possible, even in Canada — but it sure helps if you're riding a Nimbus on a day when the thermals are sucking the locomotives right off the tracks. Oh well, we can't have it all — if the good Lord had wanted us to lift over 300 fpm He'd have made us all Texans!

# A PLEA FOR Competitive Flying WITHIN CLUBS

COURTESY AEROKURIER NO. 2 - FEBRUARY 1977 - BY INGO ANDRESEN

translation by: Guenther Geyer-Doersch

A slap on my wrist and the clatter and grinding sounds which are typical sound accompaniment to a belly landing shock me out of the rather pleasant experience of my first flight in an LS3. I had retracted the undercarriage but forgot to lock it in the up-position. Actually, I have little desire to open the canopy. With tongue in cheek Walter Schneider comments, "Boy, if one could only fly ..." For nine years, since 1967 the year of the first of my 92 training flights, I am trying to outrun this comment. Along the route, on the way to wisdom, I also met the insignia of performance flying called the MacCready ring. These circular scales awakened my interest for the theory of modern cross country flying. However, an explanation of the intelligent application of the MacCready ring could not be obtained from my instructors. Since they attributed some of their own accidents to the "Devil's tools", like the "Speed to Fly" and the "Final Glide Computer", this was understandable. It was of importance for my future career that a frequent participant in the German Junior Championships made a special effort to share with me the knowledge Heinz Huth had passed on to him at the Wasserkuppe. Fred Weinholz's "Theory of Modern Cross Country Flying" became the foundation block of my theoretical advancement.

So, in 1972 I appeared as a fresh Silver "C" pilot at the Junior Championships held at the Wasserkuppe, thanks to the help of many unselfish members in my club. After 8 days of "beauts" and 2 catastrophic "no contest days" I held the last position in the field of contestants. It was demonstrated to me with utmost expedience that soaring was much more than just theoretical knowledge. I was ready to quit! However, at the end of the contest I managed to place second, which put me about centre field and was sufficient challenge for me to continue.

The following year I twice flew a 340 km out and return with an average speed of 70 km/h with my KA6. This, in turn, gave me the incentive to complete in 1974 my first 500 km FAI triangle in our club LS1c. The total flight time of 6:07 hours for 540 km hinted at the possibilities for the future. During 1975 I did three 500 km triangles. Because of an ill tempered club "friend" who took away the LS1c the day I was supposed to fly it, I decided "for spite's sake" to fly a 500 km out and return with a KA6BR, total time was 6:42 hours. A few days later I succeeded in going around a 600 km triangle which unfortunately was not validated since my baro-

graph failed. Finally, in 1976, I did those seven 588 km (average) triangles which won me the Herbert Ekloeh prize for the year and together with my 627, 673 and 710 km triangles procured me the 4020 points in the yearly German Soaring Contest 1976.

In many equal age soaring pilots these results may, perhaps, create a certain resignation, since not many in a club have access to such flying activity. Some may also feel disadvantaged, suspecting the intentional promotion by the club behind the multiplicity of these cross country flights. For this reason, I do not intend to, as usual, continue with detailed explanations of my flights, instead I will try to show the conditions that must prevail to demand achievements of this nature.

## **To create within the club a friendly attitude towards performance flying.**

To be sure, nothing is given away for free in my club and favouritism towards any individual is non-existent. I have given 2000 working hours for my 900 P1 hours. Membership fees, flying charges and contests have cost me in excess of DM 9000 (C\$3600) in the 9 years of my flying. I am quite sure my success is not directly measurable to the expense.

Even the greatest personal effort in this respect will fail if it does not happen within a performance flying minded group. I need not tell you how many potential flying careers finished at an early stage and never had a chance because of group apathy.

Our soaring news media reports in detail about team performance flying and every possibility of bettering achievements or records is exhausted. However, the dependence between internal power plays within a club and the resulting achievements of all club members goes on, almost unnoticed. Achievements in soaring presuppose a friendly ground towards performance, badge and contest flying within any club. The fight of club members for fair play for the chances of doing performance flying goes on mostly in the dark. The battle often includes such formidable opponents as the organizational structure of the club, misunderstood sponsorship, egotistical, at times even dictatorial boards of directors that hold antiquated beliefs over the "raison d'être" of our sport. In fact, undemocratic club structures and regulations inhibit the development of the ability to achieve anything of the individual club member. My

own success is due mostly to the determination of those club members who dared, through a minor revolution, to democratize our club's structure.

A democratic club structure does not, in itself, of course, incorporate the friendly attitude of the club members' majority, however, it allows the forming of opinions in this respect. Even so, one must not shy away from a sort of missionary persistence, which is, in fact, the most important attribute of any soaring pilot!

The beginning of a new orientation is often sparked by the personal engagement of a few club members in a cross country flight. After a while everybody wishes to contribute to performance flying. Too many stay away from that type of flying simply because of shyness to surmount the given resistance within their club. Individual successes often are sufficient to start the ball rolling. Envy, the result of secretive jealousy, can possibly be avoided by sharing one's own experience and knowledge with all others.

Once a few club members have experienced the challenge of a cross country flight, one soon finds the willingness to introduce regulations which are friendlier towards performance flying. Individual cross country experiences do better convince that untold verbal arguments. It would help, no doubt, if one club regulation would contain a priority of cross country flying over the famous "base circling". Additional temptation comes from successful diamond flights originating at the home base. Here one would do well in demonstrating that cross country flights can begin and, much more important, they can end at the home base! Prolonged absence of sailplanes with their unavoidable high retrieving cost, do inhibit the spreading of cross country flying enthusiasm within the club. Fairness to all club members would therefore almost demand out and return or triangle flights. Even a balloon can do 500 km free distance at times! We should be able to use our laminar profile wings for distances around triangles and out and returns. The spreading of such thoughts lead in my club within the past 3 years to an increase of the total cross country distance flown, from the "normal" 3,000 km yearly to an astonishing 50,000 km. The ratio of free distance to triangles and out and returns sank from 90% to a mere 5%.

The kind of results I mentioned earlier presuppose flying abilities which do not

Continued on page 21



# HANGAR FLYING

## Elemer Balint Memorial Fund

At the time of Elemer Balint's funeral an announcement was made that in lieu of flowers memorial donations could be made to the Soaring Association of Canada. To date about \$1000. has been subscribed to this fund. For those who were not aware of this memorial fund donations may still be sent to SAC at Box 1173, Station B, Ottawa, Ontario, K1P 5A0 and mark your cheque for "Elemer Balint Memorial Fund".

On our list of Associate Editors on page 2 you will see a new name with this issue; Mark Perry of Winnipeg is going to take over editing feature articles and stories for FREE FLIGHT. Don't misunderstand, we will still print your articles as you submit them but as Mark says, "There must be many people with a story to tell, but who are afraid of being dull or ungrammatical." Now we have someone who is willing and able to take those stories of your experiences and whip them into shape, so that they can be shared with all of us.

Articles and stories relating to the soaring scene don't have to be personal experiences of great accomplishments (but we'll take them too!). If you come across articles or stories that you think will not be read by SAC members send them along to Mark and be sure to note the source so that permission to publish and proper credit may be given. Send any material for FREE FLIGHT to the Editor as usual but if you want help from Mark in polishing up an article or doing a ghost writing job for you get in touch at 458 Academy Road, Winnipeg.

Ray Wilson, F.A.I. Awards chairman advises that SAC now carries a stock of Gold badges. Upon completion of the Gold Badge tasks, anyone wishing to purchase should submit \$42 payable to SAC together with their claim to Ray Wilson, P.O. Box 971, Kingston, Ontario, K7L 4X8.

## Do You Read Dutch?

Ary Ceelen, Editor of *Planeur* has asked if there are any glider pilots in Canada who read Dutch. *Planeur* is the periodical of the aeroclubs of Belgium, The Netherlands and Luxembourg. If you are interested in receiving this magazine about soaring activities in the Benelux write to A. Ceelen, c/o Aeropress, Eindhoven, Netherlands.

WANTED - someone to look after Classified and Commercial advertising for FREE FLIGHT. What ads run in what issues - what changes are required - should the ad be rerun - billing for commercial ads - cost estimates for preparation - these are some of the things that have to be done on a regular basis. Some regular correspondence is required with current and potential advertisers. We have screwed up a few ads for personal equipment and there have been errors in commercial ads too.

What's needed is one person to co-ordinate all of the advertising for FREE FLIGHT and increase our revenue from advertising in the process. Any volunteers?

John Firth thinks he may have flown the longest closed circuit in Canada during a flight on June 11th. His triangle started at the Rideau Valley location about 20 miles south of Ottawa to Roslin north of Belleville and then to Shirley Lake in Algonquin Park. The course measured 557 km and the flight took about six hours; short of the record John was seeking. Except for some slow areas late in the afternoon on the final leg, he had good conditions with cloud base about 8000'. John was flying a Kestrel and will be on a similar course again when conditions are right.

By the way, John says he has a computer program set up for calculating the distance of large triangles, i.e., over 300 km. If you need some help with this calculation, write to John Firth, 42 Coronation Avenue, Ottawa, enclose a stamped self-addressed envelope and supply him with the turn-point town names and all necessary co-ordinates.

"Gliding  
is  
going  
to the  
dogs!"

PHOTO BY  
WALTER PILLE



Continued from page 20.

come by themselves. A Helmut Reichmann flies better than it is possible for him to describe in a book. Flying practice cannot be obtained by reading a book. Those of us who are not lucky enough to have top pilots in their club, after whom a beginner can model himself, must participate in contests. If the club lacks those "model" pilots, one contest can substitute a few years of club learning. As for me, my achievements in soaring are unthinkable without participation in contests.

An important step in modern soaring, therefore, is the removal of prejudices towards contest flying. These prejudices are often found in contest opposed club rules. Most of the time this is conveniently "explained" by the lack of interest in contest flying within the club. Where in reality, and more often than not, certain regulat-

ions are the very reason for the general disinterest. Truly a "devil's circle" which is hard to break even with the best arguments.

Unfortunately it has been forgotten how deeply contest flying influenced and helped the development of our sport. Without contests and those infamous contest pilots we would still today have to content ourselves with flying primary gliders on the hill. Competitions and contests brought technical innovations into our sport, and lead the way to the thermal soaring of today which we now take for granted. The extent of today's triangle and out and return distances were only made possible by the technical and tactical recognitions of contest pilots. Without their perceptions, we would still be flying free distances only. For each distance kilometer flown, we would still be driving

something in the order of two retrieve kilometers ... and pay for it! This based on a rather unrealistic low cost of 0.30 DM per km retrieve distance would have cost our club last year DM 30,000. Such astronomical expense would, no doubt, have stopped any cross country enthusiasm. One aspect which shows how contest flying helped to increase the value of the experience of our sport. Until such time as the clubs internal politics towards performance and contest flying has been changed, the performance minded newcomer to soaring, will have to pay those unrealistic high costs.

... To be continued in a later issue. The next article deals with the ways a club can deal with the problem at hand. Going about the business of making our sport more enjoyable by actually showing the way to such achievements.

# OVERSEAS NEWS

## NEW ZEALAND

A few years ago, 1972, Dick Georgeson broke the world out and return record with a flight of 1002 km using the South Island of New Zealand wave. He held it for less than a month because a series of flights by the Allegheny ridge runners broke it four times in succession. At the time Georgeson said he had pretty well reached the limit of what could be done O & R in New Zealand. That may be so but he hasn't given up on record attempts. On 28th of February this year he made an attempt on the World Goal Flight record but fell short after going 1009 km. During March he tried again but once more failed.

The spectacular feature of these flights is not the distances being

achieved but the fact that they start almost at the southern tip of the South Island and after flying up the South Island, require the crossing of the Cook Strait, no mean feat in itself, and then continue up the North Island. The goal being used is almost at the northernmost tip of New Zealand.

## U.S.A.

Karl Striedieck repeats his 1000 mile flight.

Last year American Karl Striedieck flew a 1000 mile flight along the Allegheny ridges. His claim for a world out & return record was disallowed as his turnpoint photo was not taken in the correct sector. Not to let such

things stop him, he did it again on Sunday 8th May this year. This time he says it should be all OK.

## Smirnoff Derby Results

This year's Smirnoff Derby (a trans-continental sailplane race - Los Angeles to Washington, D.C.) was a clean sweep for World Standard Class champion Ingo Renner of Australia who scored a maximum 7000 points by winning all seven contest days. Second was George Lee of Great Britain, the current world Open Class champion. The remaining three competitors (all Americans) finished in the following order; Wally Scott, George Moffat, Al Leffler. The Smirnoff Derby is entry by invitation only.

# CLASSIFIED ADS

## FOR SALE

Standard Libelle, serial no. 107, 495 T. T., a winner today even over higher priced new aircraft and at only a fraction of the cost. The most complete competition/recreation aircraft, easy to fly, does not spin, which you can fly now. The complete package consists of the most up-to-date instruments, radio, oxygen and a superb strong streamlined aluminum enclosed weatherproof trailer with torsion bar axle and electric brakes.

Julius Nagy  
720 Conacher Drive,  
Willowdale, Ontario,  
M2M 3N6

(416) 225-9433 (H)  
(416) 863-1822 (O)

## FOR SALE:

Scheibe L-Spatz 55, full instruments (2 varios), parachute, enclosed trailer, July 1977 C of A, \$4500.

Michael Kappl,  
1033 Frank Avenue,  
Windsor, Ontario,  
N8S 3P6  
(519) 948-7160

## FOR SALE:

PIK 3C, Excellent condition, L/D 30:1, with instruments, parachute, Winter barograph, spare parts, enclosed trailer, newly painted, \$5,000.

Alfred Scott,  
381 Holburn Street,  
Windsor, Ontario,  
N9G 1R8  
(519) 969-8837

## FOR SALE

Schweizer 1-34B deluxe fuselage and wings filled, never damaged, T. T. 110, Serial No. 85, complete with instruments and trailer.

Walter Ross  
(416) 459-3386 (H)  
(416) 592-5027 (O)

## FOR SALE:

BG12B, white finish, good condition, always hangared, never bent. Usual instruments, Ball vario with audio, PZL vario (both with TE), turn & bank, Mentor radio, NiCad battery pack & charger, oxygen, parachute, covered trailer. Based at Erin, Ontario. A proven badge getter. You cannot match this performance at the price. Reason for sale: moving. \$6,000 or make offer.

Jack Dodds,  
104 Charles Street,  
Georgetown, Ontario  
(416) 877-4973

## FOR SALE:

Cherokee II, excellent condition, always hangared, electric T.E. variometer, aluminum enclosed trailer. Silver C and better potential, performs with 1-26 in L/D.

Gary Droppo,  
213 Welborne Avenue,  
Kingston, Ontario  
K7M 4G5  
(613) 389-0806

## FOR SALE:

HP-11. C-FRNN, 17 and 15 metres, Instrumentation includes: Winter variometer, Cambridge audio vario, ASI, altimeter, electric turn & bank, Radair radio. Ship is newly painted, enclosed trailer is included. \$8,900.

Al Clarke,  
741 Johnson Street,  
Kingston, Ontario  
(613) 549-3056 or 544-0106

## WANTED:

BG-12, Tern or similar performance ultra-light (homebuilt) sailplane, preferably with trailer.

Gary Droppo,  
213 Welborne Avenue,  
Kingston, Ontario  
K7M 4G5  
(613) 389-0806

## FOR SALE

Ka-6CR in excellent condition, fresh C of A. Two varios (one Moore electric with audio), ASI, Altimeter, Mentor Radio, Oxygen, Trailer, factory made wing, tail and fuselage covers, Tail dolly, Tools, etc.

A. Heinemann  
R.R. 1,  
Gormley, Ontario  
(416) 727-9566

## FOR SALE

PIK-20B and factory trailer. Water ballast, carbon spar, Instruments, radio, oxygen, Braunschweig tube, C of A until Sept. 18/77. Below factory price.

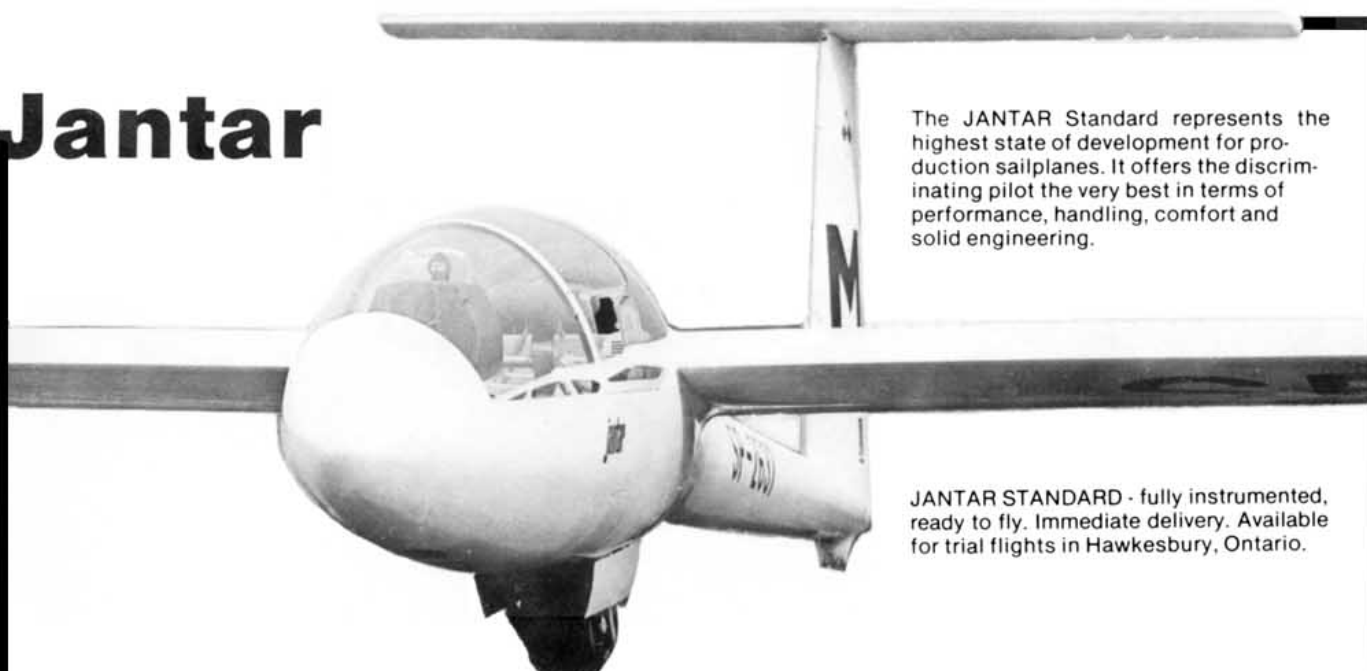
A. Heinemann  
(416) 727-9566

## Notice to Advertisers

The advertising rate for any size advertisement is based on \$10.00 per page and applies to space only, camera-ready copy supplied by the advertiser.

Professional creative design and typesetting is available at a competitive price and estimates will be freely given if appropriate instructions, with the advertising copy, are submitted to the Editor well in advance of the publication date.

# Jantar



The JANTAR Standard represents the highest state of development for production sailplanes. It offers the discriminating pilot the very best in terms of performance, handling, comfort and solid engineering.

JANTAR STANDARD - fully instrumented, ready to fly. Immediate delivery. Available for trial flights in Hawkesbury, Ontario.

Canadian Distributor for JANTAR Sailplanes:

## Technex International Ltd.

2600 Brabant Marineau, St. Laurent, Que. H4S 1L1  
Telephone: (514) 331-4351 Telex: 05-827651



# SLIMPACK

The "SLIMPACK" is designed for use in GLIDERS, AEROBATIC AIRCRAFT, HELICOPTERS, SAILPLANES & NIGHT SINGLE ENGINE operations.

Its unique narrow flexible shape keeps the pilot in the correct position for full movement of his controls. Foam padding in seat & back provides comfort for long flights & its shaping removes pressure points.

Fits all seat shapes, comfortable to walk in or move around aircraft.

#### SAFETY FEATURES:

Harness features two adjustable ROCKET JET fittings, for quick connection & positive locking.

Apex first deployment & built in pockets prevents periphery deploying before apex & eliminates malfunctions.

Container:  
Fits 24', 26', 28' canopies.

Colours:  
Black, Red or Blue.

#### Prices:

24' Surplus Canopy \$415.00  
28' Surplus Canopy \$465.00  
26' Lopo Canopy \$560.00

Horizon  
Aero Sports

#### PARACHUTING HANG-GLIDING

1359 Kingsway  
Vancouver, B.C.  
Canada V5V 3E3  
873-2727 876-2631



Coming Soon!

# Cross-Country Soaring

The English edition of  
Helmut Reichmann's epic  
**Streckensegelflug**



It's all here . . .

From the basics of how to gain the maximum rate of climb in a thermal to an in-depth study of best-speed-to-fly theories, from the MacCready ring to Netto and Dolphin techniques, from meteorology and weather forecasting to a review of the latest sailplane instrumentation — all this and much more is contained in Helmut Reichmann's comprehensive study of cross-country soaring.

Beautifully printed and profusely illustrated with diagrams, charts, and photographs, Cross-Country Soaring is the new reference book for all aspects of high-performance soaring.

#### Introductory Offer

For a limited time only, Cross-Country Soaring is offered at a special pre-publication price of

**\$22.50**

Publication is scheduled for Spring 1977. Order your copy today and save 10%. Please include payment with your order.

**GRAHAM THOMSON LTD**

3200 AIRPORT AVENUE

SANTA MONICA, CALIFORNIA 90405

(213) 390-8654

California residents please add sales tax.