



Free Flight

THE NEWS LETTER OF THE SOARING ASSOCIATION OF CANADA

November, 1969

EDITORIAL

In most areas of the country, gliding has come to an end for the year. Initial reaction rates the season's weather as poor, but the trophy flights listed by Paul Tingskou show more good days than one thought, and the wave season in the East bestowed favours on at least a few. One must just plan to be more organised next year to take advantage of any likely day.

We are sorry to report the death of Alf Schmied of Calgary, in a flying accident.

S.A.C. NEWS

Western Instructors' School. This was held at Red Deer, Alberta, in mid-September, under the guidance of Walter Piercy of Kingston. We have a report on the school later. Walter states that the school and the meeting with Western pilots was most enjoyable and rewarding. At the end of the course a banquet was put on for those attending the school. Walter and Helen continued on to Edmonton and had an interesting and enjoyable dinner meeting with E.S.C. members.

1970 Canadian Nations. Franck Pellerin was in Quebec province on business recently and called in to see the M.S.C. operation, and we had an opportunity to discuss the 1970 competition with him. The two Winnipeg clubs are sharing the responsibility of making the contest arrangements. These appear to be thorough and well thought out, and are being pushed ahead with enthusiasm. It is planned that most flights will be triangles or out and returns, so possible poor areas to the East need not be of concern.

Brandon was proposed as a possible contest site, but as this city is 140 miles from Winnipeg, communications would be just too difficult. In contrast, Carman is only 40 miles from Winnipeg. The town council of Carman is taking an active interest in the contest and has already committed funds to assist with arrangements.

International Team Fund. S.A.C. Director Walter Piercy and Frank Holman are spearheading another raffle scheme, to collect money for the 1970 Canadian team. Clubs will receive books of raffle tickets in the mail within the next month, and are urged to get their members selling tickets. There will be prizes for the West and for the East, with the draw on March 21st, 1970, at the S.A.C. annual meeting, to be held this time in Montreal. First prizes will again be colour T.V. sets, with \$50.00 cash second prizes.

Fitness and Amateur Sport Grants. It is appropriate to mention, in connection with the International Team Fund Raffle, that it is unlikely that Government grants will be made to assist soaring in the near future. Mr. John Munro, Minister of Health and Welfare, has written to the S.A.C. President. The Letter, dated October 16th, 1969, reads as follows:

"As you know, the Fitness and Amateur Sport Program has been in operation for some seven years. During this time almost all segments have operated under the same general criteria with only minor modifications. I have been concerned that the program be kept in tune with changing needs and conditions and consequently have requested that several reviews be undertaken. Our assistance to sports and recreation programs is one of the areas being studied.

While it would be premature at this time to forecast the final outcome of the study currently underway, there are sufficient indicators to suggest that there will result a significant re-orientation of the grants structure under which we have been operating. Also, because of the continually increasing demands on the available resources of the Fitness and Amateur Sport Program it will be necessary to establish priorities in the allocation of the available funds. At this point, however, I must advise you that in all likelihood it will no longer be possible to provide federal financial assistance for the activities of your association and this should be taken into consideration in planning your program for future years.

Shortly, the Fitness and Amateur Sport Directorate will communicate with you to explain the method used in arriving at the priority system. I hope that our past assistance has been helpful and I wish you every success in the future.

Yours sincerely,

John Munro"

International Team. Terry Beasley reports that voting is taking place for the four pilots to represent Canada at Marfa in 1970. The regulations allow two pilots in the open class and two in the standard class. Hal Werneburg of S.O.S.A. is making a Phoebus Available, and a Standard Libelle will also be available for a Canadian pilot.

Medical examination for glider pilots. Paul Thomsen, S.A.C. President, has received a letter from the Director of Civil Aviation intimating that a medical examination will likely be a requirement in the near future for holders of glider pilot licences. We have not seen the Director of Civil Aviation's letter, but Paul Thomsen states that, with one exception, the S.A.C. Directors approved the proposal. In the August-September issue of "Sailplane and Gliding", the British Gliding Association oppose similar legislation in Britain. The B.G.A. feels that a medical examination for glider pilots is unwarranted in view of medical investigation of 14 fatal gliding accidents in the U.K. which showed no evidence that a medical examination would materially increase the safety of the sport. A copy of Philip Wills' letter to the British civil aviation authorities was included with Paul Thomsen's letter to Ray Goodwin, Canadian Director of Civil Aviation.

CLUB NEWS

Vancouver Soaring Club: From the "Vancouver Soaring Scene" for October.

Cirrus. Peter Van Gruen is expecting a new Cirrus any day now. The SHK he formerly owned has crashed near Seattle and was completely destroyed. The pilot only suffered a black eye.

1-26. The club completed the lease-purchase of a 1-26 for \$50 per month. The ship is launched by nose hook only and launches of over 1,000 ft. are rare.

Visitor. Glen Lockhard from Ottawa was out at Hope on October 11th. Glen is rebuilding a Cessna 182 and a big Airstream trailer in his metal workshop. He is an engineer on a Government Jetstar.

Hope Airport. At last report, the D.O.T. has agreed to turn Hope Airport and its facilities over to the Glider Club. This move is reported to be a result of the Liberal Government's austerity programme. We will have the truck, diesel tractor and mower, the airport manager's

house, and the equipment shed. We must maintain the airport facilities and mow the grass. Maintaining the airport will cost the club considerable money, but the Directors feel that the advantages of having our own field fully justifies the expense. Property taxes will be about \$1,000 a year.

Vic Shobridge

Western Instructors' School. Your esteemed C.F.I., George Eckschmiedt, and yours truly, Jack Barron, had the pleasure of attending the first Western Instructors' School, which was held in Penhold Canadian Forces Base, just outside of Red Deer, Alberta.

Under the guidance of Walter Piercy, CFI of S.A.C., and assisted by Don Skinner of the Cu-Nim Club of Calgary, we were given lectures in Flight Instructional methods, D.O.T. regulations, and Meteorology. During the afternoon, practical experience was given, using one of the Air Cadets "2-22E's." This comprised of each of us acting as Instructor, and recording our instructional technique on a tape recorder. Preview hearings of the tapes were heard in the bar over a few brews, and a few good laughs were had by all. But, back in the classroom the next day, the tapes were again played back and analysed for proper instructional technique.

All of Western Canada was represented, with "Siggy" Scholz, of the Cu-Nim, Calgary, who sings a mean Alto in the bar; Harry Byrt, President of the Edmonton Gliding Club, who started gliding two years ago and already has two diamonds, earned with his HP-11; Fred LeReverend, also of Edmonton, and our unofficial Sargeant-Major of the course (plays drums professionally); Dave Pearson of the Van Isle Gliding Club, who is the Secretary-Treasurer and Tow Pilot, and thinks he's flying Apollo 11 every time he flies, quote "I have lift-off" unquote; Jack McMorran, Winnipeg Gliding Club, a professional meteorologist, who always seemed to be available for the passenger rides; George Evans, C.F.I. Winnipeg Gliding Club, who corrupted our beloved CFI by taking him to the Park Hotel in Red Deer to look over the local gals; Jon Vermeulen, also of Winnipeg, who is really into gliding, married and Club's President, Zella, who accompanied him, and supplied a bit of feminine company to us one-week bachelors, and last, but not least, Dunc Marshall of the Red River Soaring Association, who arrived in real style, via a Cessna 150, only thing is, he reluctantly admits, it took him two days to get to Penhold.

Walter Piercy's wife Helen was with us, although I think Walter kept her busy cooking mushrooms. It seems Walter is quite a nut about them, and spent a lot of time picking them.

We had the pleasure of meeting Kerry Bissell, of the Red Deer Gliding Club, and who is also our Pacific Zone representative & Vice-President of S.A.C. Kerry spent a lot of time arranging, advising, and generally helping all of us to attend this course, and we will owe him a big thanks.

It was a full and busy week for us, we met a great bunch of guys, and gals, gained a wealth of information, both instructional and club-wise, and if we had to do it again, I don't think we would hesitate. It was most enjoyable.

Jack Barron.

KAMLOOPS S.C.

Our Club is known as the Kamloops Soaring Club nicknamed "Thermal thumpers". We have our own field 36 miles south of Kamloops. It is 1.1 miles long, graded and grassed. At present we have a TG-3A for dual training. Last winter we rebuilt a Kirby "Cadet" and this fall plan to rebuild a "Cinema". We have two privately owned tow planes, a 172

and a 108 Stinson and next spring will have a winch completed.

Although we are a small club, 15 members, we are quite active. Several of us got over to Innisfail and helped with the Canadian Championships and we co-sponsored the Western Canadian Meet along with the Vancouver Soaring Club on our field. We have a good area here for our sport and as soon as we have a few more solo pilots and newer ships we should have a bit more interesting news to report. Till then.

Don Lurkins.

CU-NIM SOARING CLUB, CALGARY.

Alf Schmied. We are sorry to report the death of Alf Schmied of Calgary on September 27th in a gliding accident at Pincher Creek, Alberta. Unofficial reports say that his HP-14 lost a wing following a spin recovery. He bailed out but his parachute failed to open in time. Alf Schmied made a great contribution to gliding in this area, and news of his death comes as a great shock to his many friends here. He was currently the C.F.I. of the Cu-Nim club.

(Courtesy Vancouver Soaring Scene).

Alf, whom we got to know very well when he lived in Vancouver, was flying in strong turbulence at Pincher Creek, Alberta when his new HP-14 was seen to enter what was probably an inverted spin. In the very high speed inverted recovery one or both wings buckled. Alf bailed out at 4-500 feet; his parachute filled just as he hit the ground.

We shall remember - 5 - a very nice guy and a strong soaring enthusiast. We extend our heartfelt sympathy to his family.

Phil Platt (from Seattle "Towline")

CU-NIM S.C. (continued)

In the course of a letter to Charlie Yeates, Jim Reid writes, "As I sit here in my office the day after the Meet, the sky is blue and full of beautiful cu's, a nice wind from the west, of course a perfect day for competition flying. I am going up to Red Deer tomorrow to see if I can push the old 1-23 H-15 300 miles or so and diamond C distance, quite a dreamer eh! Oh yes, forgot to tell you I earned my gold C distance and diamond C goal the first time I tried it. I flew approximately 250 miles to do it, however straight line flight turned out to be 301.431 kilometers! how lucky can you get! It was a very enjoyable flight, not too easy either. Dick Mamimi got his diamond distance at the same time with some rather unusual happenings. Dick got well ahead of Gail who was retrieving and finally lost contact, so on landing it was getting dark and he was worried, he called the Saskatoon Tower and explained his situation so they tried radioing Gail with no results. However, they told Dick to call in in half an hour as they had another idea. So here is poor Gail driving along not knowing where to go or how to find Dick, the radio of course on full volume, when all of a sudden a voice booms over "ALT ground", "ALT ground" this is Air Canada DC-9 flight - do you read?" Gail is quite new at using the radio and, of course, Dick had been really stressing the does and don'ts of proper communication. Well I guess Gail brought the car to a screeching stop with rocks and dust flying and finally decided she had better answer, it went something like this, "Air Canada DC-9 this is ALT ground, go ahead". "ALT this is Air Canada DC-9 you are to pick up Dick at the town of Aberdeen, north of Saskatoon, over" "ALT ground to Air Canada DC-9, thank you, out". After about 10 minutes of silence "ALT ground this is Air Canada DC-9, what is it that you are doing anyway?" So Gail had quite a chat with the boys, they were really interested and were happy to have been of assistance. This is the first time I have heard Air Canada being used for retrieve assistance. Unique isn't it.

Jim Reid.

The Edmonton Club newsletter reports that Dick Mamini of Calgary crossed the Rocky Mountain range from east to west, taking off about noon from the forestry airstrip at Kootenay Flats on the North Saskatchewan river and landed at Golden, B.C. about 4.00 p.m. The maximum height reached was 14,000 ft. and was made against a 30 m.p.h. headwind.

EDMONTON S.C.

Following some good soaring weather during the latter part of July, August was poor, and the weekend turnout of members was low. Membership in the club has however climbed to 74, which E.S.C. President Harry Byrt feels gives the highest gain for all Canadian Clubs. A tribute is due to Garnet Thomas for the excellent promotion campaign he has made to attract new people.

In the October "Towline", of the total membership, 35 are new members this year. We believe this is a typical percentage as found in other clubs, though perhaps on the high side, but acceptable provided some of the newcomers become dedicated gliding enthusiasts. A sign of the time of year is a notice that the club's annual banquet will take place on November 22nd.

REGINA GLIDING AND SOARING CLUB

The club has trained a number of students this year, including two air cadets. We also have two of our members graduate to instructors, and one of them, Harry Hoiland, has gone on the course held in Alberta (SAC instructors' school, Penhold. Ed.)

Kay Dixon.

Letter to the 1-26 Association

"Well I did it! got my third diamond in the 1-26. My previous 2 diamonds were also in the 1-26. So if it sounds like bragging ignore that part, but I sure was pleased to get my free distance diamond. I have been unable to do any serious soaring except on Saturdays as my Sundays are tied up pretty well with club activities. Anyway every Saturday to date has been lousy to put it mildly, usually cold windy and sometimes rain or even snow. Sundays yes! Saturdays no! That is until June 14. This was the day! I just knew it. We had a record cold snap on the previous Monday, the cycle had changed, maybe Saturday would be good, and was it ever. The sky was clear not a cloud in the sky but the weather man said there would be lift and predicted high cu over Minot along the route.

I was at the airport at 9. Other people had ideas too... Jerry Dixon was going for his 5 hours in the club 1-26 plus a cross country flight to his farm 55 miles away. Julien Audette was going to try an out and return to Virden Man. about 175 miles away. Well I was going to try something too. I decided to goal on Carrington, North Dakota. It was easy to locate from the air, it was fairly close to be downwind and it was 326 miles which was about right for diamond distance. I would never make it, or would I? Well I could try.

It took me some time to get organised. I must have all the maps, barograph sealed, make sure it writes, take along a landing card, make out a declaration, get the glider assembled, stow the tie-downs, get a couple of chocolate bars, (no time for lunch). At last I was ready.. wait, I better brief the crew--my son Donnie and wife Elinor. Okay. Jerry got away first, well it's still just 11:30. Jerry radioed down to his crew that he was at 7,000 indicated. Soon I was in the air and released at 11:40 at 1900 feet over the airport. I fumbled around and finally connected with the good lift, 1000 feet a minute if the gage was right. Look out Jerry I'm coming up, Soon I was at 9700 indicated, my best start ever, so I set out.

Thermals were good but there was no cloud so it was hit or miss to find the next one. At 30 miles my luck changed and I couldn't run into that next thermal. I finally picked up again after getting down to 2000 feet over the ground. Talking to Jerry later he had run into the same thing so I guess it must have been a flat area.

After 75 miles I finally got to the cu's. I seemed to be moving pretty slow up until that time but with the clouds to mark the lift I felt I could press a bit more. Mind you, I don't think I ever flew between clouds at more than 65 and more often at 55 mph. Under the big clouds I was able to climb up to 10,500 feet and then fly maybe 70 mph so as not to climb into the cloud before clearing it's edge. Maximum height I got was 11,000 asl. Along about Minot things got much weaker as the cloud cover was blanking out the ground. The lift seemed to be quitting on me. But I was pretty high and worried my way through a bit slower but still moving pretty good. For a while I thought I had a good chance of making the goal, but along about here I had serious doubts. After passing this clouded area I had some more reasonably good lift about 600 fpm and got right back up to 10,000. By this time I was probably 75 miles from my goal and it was 5:30 Regina time, 6:30 here, and lift was dying, I'd never make it. Maybe if I got one more thermal. Well, here is a weak one! it was the last one but it kept me alive and got me over 8,000 feet. What was that glide angle? 23:1? How many inches left to go on the map? No! darn it I can't quite make it, maybe I can get my distance but I know I can't make that goal. Well, I did hit some reduced sink and it sure helped. I didn't dare turn as I know you can lose 2 or 300 feet so darn quick. I kept nursing it along, wondering and hoping and finally I could see that I could make it. Heck, no sweat! look I still have 1500 feet over the goal airport. After a circle around I put on the spoilers and put her down. I hopped out. Good old mother earth. Was I cold! and sore and stiff and shaky. A passing car came in and they were sure surprised when I told them I had come from Regina.

Well we filled out the landing card, had it witnessed and phoned the crew headquarters, and the border patrol. The nice family took me into town and waited 'til I had eaten and delivered me back to the glider. Shortly the crew arrived and we were soon on our way home after a very satisfying flight.

Total time in the air was 7:35. That's a long sit. Advice? Not much. Be ready when the right day comes, get in the air early and keep working and don't give up.

Needless to say I am real pleased and think this should make a good entry in the sweepstakes. Best of everything to you and keep up the good work.

Harold A. Eley.

P.S. Jerry made his 5 hour Silver C time plus his goal flight of 55 miles. Julien had a tire problem and got away late in his HP-11. He did make Virden and about 50 miles back so it was a pretty good flight too.

We are hoping for lots more club cross-countries. Unfortunately I will have to be away for the next month so probably won't get too many more chances."

AIR SAILING CLUB

"Thanks to the Toronto Soaring Club president and executives we managed an early start in June. Upon arrival of the second ASK 13 from Germany, we held a christening party, whereby our member, The Rev. Horst Rueger in a formal gathering "Baptized" our planes, the CANADIAN GOOSE, the CARDINAL and the BLUE JAY.

We are happy to announce our harvest! Air Sailing Club produced a good half dozen solo pilots this season. Such an accomplishment solves the high and difficult of our competition and Dieter Kiklas finally got the better of mechanical problems.

Our Canadian team still has a good record in the international circuit, and Don Bell has had a very successful season. He has won several trophies and has been a valuable member of the team. Don Bell has also been a valuable member of the team. Don Bell has also been a valuable member of the team.

In the short space of approximately three seasons, Don has made up 262 hours in gliders, and his wife has made up 32 hours. This is a very good record for a new team. Don and his wife have been very successful in their flying. Don has also been a valuable member of the team. Don has also been a valuable member of the team.

The spot landing contest we had, organized by Max, was a very successful one. It was held in the beginning of August, about six of us started the flying week. The contest was held in the beginning of August, about six of us started the flying week. The contest was held in the beginning of August, about six of us started the flying week.

Following the fire at Slingsby's, cancelling out our order for the T-53, the club ordered a Blanik which should be delivered within the next few weeks, at which time we will be open for new memberships. We always like to keep a workable ratio of planes to members.

Since the days of the T.G.3 several men and one woman have received their glider pilot licences, and for you gals who think you are playing a man's game, the woman got the highest marks on the D.O.T. exam that the group wrote last spring!

Recently some of us had the pleasure of meeting Richard Mehm and his wife who are the possessors of several albums of irreplaceable snapshots taken in Germany and Austria during the very early days of gliding. At that time Richard was designing and building sailplanes, one of which achieved the world record. Both Kronfeld and Hanna Reisch appear in the photographs, as well as many others whom you may have read about.

The club recorded 200 flights in 1966, 423 in 1967 and in 1968, 825 flights, 128 being those in private owners planes.

Jim Steinlin is our president this year; he has a special flair for parliamentary procedure and keeps all our meetings in line. We are very fortunate in having several airline pilots who have contributed much of their knowledge and experience in the interests of better flying in general. Harvey Russell did eleven consecutive loops in the 1-26, giving him a slight edge over just about everybody. Our youngest instructor, Kees Van Berkel, flew from Erin to Rockton in a Ka-6 last year.

Dorothy Renwick,

MONTREAL SOARING COUNCIL

Due to the initiative of C.F.I. George Adams, several experienced pilots surveyed various sites for a possible wave encampment during October. From several places visited, Lake Placid was chosen, because of its pleasant location, and because of its proximity to several mountain ranges. There is a good airfield near the town at 1,744 ft. A.S.L., and Whiteface Mountain (4,872 ft. ASL) at 7 1/2 miles and Mount Marcy (5,344 ft. ASL) at 11 miles from the airfield offer possibilities for wave formation. A number of club members spent the Thanksgiving weekend at Lake Placid, and on one day flights to 12,000 ft. were made. One drawback is the heavily wooded nature of the area, with few emergency landing fields.

So far the best wave flights have been made in an area downward of a North-South mountain range, some 5 to 6 miles East of the airport. John Firth (G.G.C.) showed this area's possibilities by reaching 21,000 ft. for his diamond height on 18th October, and Gunther Geyer

(M.S.C.) reached 18,000 ft. for a gold C climb the same day. On 25th October, John Bisscheroux (M.S.C.) went to 21,000 ft. for his diamond height, while Ted Henderson (M.S.C.) reached about the same level but may have missed the diamond.

Our Boston friends at Mount Washington (6,373 ft. A.S.L.) have been doing well, with 7 or 8 climbs to over 24,000 ft., the best being 29,000 ft., though there were only three or four good days in a month. Ed.

Local news is that the Musger 23 was badly damaged in an off-field landing at Lake Placid. The owner, Gunther Geyer, plans to rebuild it. The Kestrel of Dave Webb, Wilf Jonah and Ted Mani has arrived and an LS-1 is due next summer for Helmut Hermes.

Art Klinge (G.G.C.) visited Lake Placid while on leave from Germany - flew Dave Parsey's HP-14. Art speaks highly of his Pirat (as good as a Ka6E); says he should be demobbed and back in Canada in January. He may be assisting with an air cadet gliding program.

QUEBEC SOARING CLUB

The Penguin reports that towpilot Daniel Martin has returned to France for his military service. On Labour Day weekend MSC visitors Fred Cooper and Norm Swettenham brought their syndicate Blanik while Gerry Nye brought the syndicate 1-26. Several cross-country flights have been made, all during the same week of July. Maurice Laviolette took the club Ka6CR to Three Rivers and returned to La Perade, Keith Park took the same ship to Riviere-Ouelle and back to La Pocatiere, and Bertrand Girard took his Ka6E to Beauceville and back.

COMPUTING AT THE CANADIAN NATIONALS

It's been said that a computer programmer has to be willing to spend five hours setting up a program that will save him five minutes calculation. Thus it was fortunate that it was January 1969 that the suggestion was first made that we do all the calculation of scores for the 1969 Canadian National Soaring Championships by means of a computer. This made it possible to have the program checked, and even tested at a Regional meet in May, before the nationals started on Dominion Day, July 1st.

It was only the use of a time-sharing system that made this possible. This type of facility has become commonly available only within the last few years. It uses a common teletype terminal to communicate with a Distance Computer over ordinary telephone lines. Connection with the computer is set up simply by dialing the appropriate long distance number. Whatever data are required are then typed in on the terminal keyboard. The calculation and analysis is carried out by the computer, and results typed out for the operator. This becomes quite reasonable in cost, because 40, 50 or more users may be using the computer at the same time, and thus sharing the total cost.

Our first action was to contact Canadian General Electric, since they were one of the few companies offering time-sharing services in this part of Canada. With a minimum of persuasion, (and a maximum of cooperation). They agreed to have a terminal installed for us right at the airport. They also arranged for us to use their computer facility in Seattle, Wash., some 700 miles away as the telephone lines fly.

The meet was to be held at Innisfail airport, which is about five miles west of the small town of Innisfail, Alberta. Only one telephone line was available on the site, and this was

normally connected to a pay-phone. However, for the ten day period, we were able to get the full use of the phone line for the contest. This provided the phone line to the computer, and it was still possible to use it for a telephone call when not actually communicating with the computer. However, one line was not enough for 26 pilots and crews. Additional phone service was made available at nearby Penhold, and the Canadian Armed Forces helped greatly by providing radio-telegraph service between their base at Penhold and the Innisfail Airport. This provided the communication facilities necessary for the pilots and crews.

Our first step in designing a computer program was to start with a simple version. This could be supplied with the distances flown by each competitor, and would then calculate daily and total points and standings from this. Results were promising, so we looked also at having the computer calculate distances covered, or speeds, in the case of speed tasks. This also provided feasible, provided that all landing points and goal or turning points were specified by means of latitude and longitude coordinates. This was not really a new requirement, and no difficulty was expected.

Study of the rules showed that there a total of nine different tasks that could be specified. These are coded numerically for reference in the program, as shown below.

- | | |
|---------------|---|
| Task type No. | 1 - speed race, around a triangle |
| | 2 - speed race, goal and return |
| | 3 - speed race, to a goal |
| | 4 - free distance |
| | 5 - distance - around a triangle, then distance along a given course. |
| | 6 - distance - goal and return, then distance along a given course |
| | 7 - distance - around a triangle, then free distance |
| | 8 - distance - goal and return, then free distance |
| | 9 - Cat's cradle, around five to eight points. |

All tasks were assumed to start at Innisfail Airport, and it was also considered a turn point for the Cat's cradle, tasks would then be specified by reading in one or more additional sets of latitude/longitude values, for the turn points, etc. Thus for task type 1, a triangular speed race, two additional points would have to be specified. In the program a special table of Lat/Longs was set up, the first entry being Innisfail Airport. A variable number of additional entries could then be supplied, depending on the task set.

A basic part of the program was the calculation of distances flown. A formula was extracted from a G.E. program to calculate great circle distances from latitude and longitude coordinates, and this was included in the program to be used whenever required. The only change needed was a minor one to use the value of 6378.245 KM suggested by the FAI as radius of the earth.

Study of the types of tasks showed that a competitors daily performance could be specified in one of five different formats. It was found possible to have the computer program determine the type of data being submitted by the magnitude of the value entered. Only two special rules were required for this, first, a value of -1 would indicate that the pilot had not competed that day, and second, turn points would be identified by numbers (1, 2, 3 etc.) which would be submitted to the computer as 100, 200, 300, etc. the program was thus able to check the first data point for each pilot and from its magnitude interpret the data, as follows -

Value Entered	Interpretation	Next Action
-1	Did not compete	Go on to next competitor
0	Competed, but did not score time value, in hours	Go on to next competitor

Value Entered	Interpretation	Next Action (Cont'd)
Below 20	Time value, in hours	Read in minute value, compute speed, then go on.
20 to 99	Lat(Degrees) of landing	Read in lat. min. and long (deg., min.), calc distance covered, then on to next
100 or greater	Turn point	calc distance from last turn point, then read another value for same competitor

Having reached this point, it was found that the program was reaching the size limit of what could be handled by GE's simple mark I system. It was therefore necessary to break the program into two pieces, with the first part just calculating distances covered. These would then be passed on to the second part, which would calculate point scores and print results. The only step left before going on to this latter was to print out all the input data, as received by the computer, together with distances calculated. This served as a check on the typing of the input. Most errors in the data were quite apparent in this listing, and could be changed at this point, without carrying on to the end.

For those who land off a specified course, as in a triangle, it is necessary to deduct as a penalty the distance that the landing is from the direct course. This is done simply by a single calculation routine. However, if the landing is at an unusual location, such as beyond the point being headed for, behind the corner already noted as having been passed, or exactly at one of the corner points.

The formula given in the rules for calculating points for distance tasks is -

$$P(1) = 1250(D(1)/D_{max} - 0.2)$$

Where P(1) are points for competitor No. 1,

D(1) is the distance covered by No. 1,

D_{max} is the maximum distance covered by any competitor on that day.

Strictly applied, of course, this would award negative points to anyone who went less than 20 percent of the maximum distance. However, it was assumed that zero points was intended in such a case. A special check for these cases therefore had to be included.

In the various speed tasks, it was necessary that at least two pilots complete the task in order that it be scored as a speed task. If this was the case, points were calculated separately for distance and speed, and added together, as below -

$$PD = 1000 - 800 (NC/NC + N20)$$

$$PS = (1000 - PD) * 2 * (S(1)/SP_{max} - 0.5)$$

$$P(1) = PD + PS$$

In which PD are the points awarded for distance,

PS are the points awarded for speed,

NC is the number of pilots who complete the tasks,

N20 is the number of pilots who cover at least 20 miles,

S(1) is the speed of competitor No. 1,

SP_{max} is the maximum speed for any competitor.

For a competitor who did not complete the task -

$$P(1) = 1.25 * PD * (D(1)/D_{task} - 0.2)$$

Each day, points for the contest to date must be available for the daily calculation. Therefore, each day's points must be stored for use later. This is done internally in the computer, and then on the following day the previous points are added to those for the current day for the scores to date. It is of course set up so that if the calculation is to be repeated for one day, the latest points are retained, with previous ones being discarded. Also, care must be taken that the fourth day's points be added to those for the third day, and not to those for the second day, etc. The computer will do the addition with unerring accuracy, but the results will still be incorrect if the operator instructs it to add the wrong numbers.

Once points are computed, standings can be obtained by scanning the points for the competitor with the largest score, and awarding him first place, and so on. The main point to be watched for here is to allow for cases where two people may have equal scores, or where one may even be zero. Once the procedure is established, the same routine may be used to calculate standings on both a daily and a total basis.

In operation, the program itself performed without error. The total procedure (reading in the daily data, doing the calculations, and printing the results) took slightly over 10 minutes, but the actual computer time for the computation was only 60 to 70 seconds. Since the teletype terminals operate at only 10.8 characters per second (5 to 6 seconds to type an average line) some 90 percent of the total time is used for just input and output. This is of course a characteristic of many computer programs.

Considering the experience of those competing, it was surprising that so many mistakes were made in measuring the coordinates of landing points. These generally were minor slips, carelessness, or even lack of familiarity with proper methods. This made it important that the latitude/longitude values submitted be cross-checked carefully against the map. The computer was particularly useful in running preliminary results as soon as the initial reports were in, then repeating the calculation when the final landing cards were turned in, and even repeating it again if errors were detected. A further 'final' run could also be made after the photographs had been inspected, if this caused any disqualification of turn points etc. it was important that the results be clearly marked as preliminary, final, etc.

In this description I have tried to point out some of the ways in which using the computer differed from doing it manually. The main points were -

- the calculation speed was greatly increased, so that the scorers had to be responsible only for checking the data, rather than the pencilwork.
- in preparing the program, all possible situations had to be provided for.

Several possible changes have been suggested, which might be of interest if the same program were to be used again. For instance, the program initially printed zero for a pilot who did not compete on a particular day. This was later changed to print 'DNC' where required, but still award zero points, of course.

Final results were printed out in order of contest number, rather than by standing. This latter was not included in this version of the program because of internal details, but could be arranged by using one of several possible techniques.

Included in the program are three assumptions -

- no flights would be made across the equator,
- no flight would be made across the Greenwich mean meridian.
- a value could be chosen (15 in this case) such that no speed task would take more than this number of hours, and no latitude value would be less than this value.

These of course were easily met in the Canadian Meet, but slight modifications might be needed if the program were to be used in other parts of the world.

As noted, this program was run with what GE call their mark 1 system. The newer Mark 11 is now also available here, but the several advantages available with it didn't seem to offset (in our case) the time required to make the change-over. There are also many other time-sharing computer systems available, and use of any of them would require a greater or lesser number of changes.

This same program could be easily adapted to use in other meets, and there are few places too remote to make connection with some time-sharing service. This could be done most simply if the contest rules were very similar to those in the Canadian Nationals. Some changes could be made easily, others would be rather more difficult. For instance, changing the formulas used for scoring could be done very simply, but adding a possible new type of task would be more difficult. Also, it would be simplest if a GE type terminal were used, although others could also be accommodated.

Now that the program is available, I would personally like to see it used further, and would help as far as possible in making any changes. The program is available on punched paper tape, and copies, with complete directions, could be supplied at a modest cost.

In our case, the computer facilities were kindly donated. However, since these services could be supplied commercially at a cost as low as \$100 to \$200, I would expect that results for all future soaring meets will be calculated by computer - thus saving the official scoring committee many hours of midnight toil.

George Dunbar

SCORES FOR CANADAIR, B.A.I.C., & "200" TROPHY

The latest complete score sheet up to September 28th, 1969, shows a very encouraging interest in this SAC sponsored contest, with what is believed to be the highest number of entries ever.

In answer to some of the questions asked: The flights at the Canadian NATIONALS are not automatically included, submissions should be made by the individual pilots. One of the reasons for this is that some of the pilots may be eligible for the "200 Trophy", the Trophy Committee having no way of confirming this.

Some information is also incomplete such as to date of flight, Sailplane flown, member of which club and verification on first entry that a pilot is in the "less than 200 hrs. solo" category. When such verification is missing the score sheet will not show entry for the "200 Trophy" race.

For those who like to get busy with pencil and paper, the points are arrived at as follows:

Free Distance Flights	1.00 points per mile
Distance to Goal	1.25 points per mile
Triangle Flights	1.50 points per mile
Out/Return Flights	1.50 points per mile
Altitude Gains	1.00 points per 150 ft. gain.

All flights must originate in Canada - Incompleted GOAL, TRIANGLE or OUT/RETURN flights will be treated and listed as DISTANCE miles.

Please make sure this listing is posted on the club bulletin board or otherwise made available to all pilots.

SCORES FOR "CANADAIR", B.A.I.C." and "200 TROPHY"

April	28	John Firth	GGC	169.20 mi	Out/Return	HP-11A	
May	4	Harry Byrt	ESC	58.00 mi	Distance	HP-11A	200
"	6	David Marsden	ESC	191.63 mi	Triangle	HP-14	
"	6	Harry Byrt	ESC	98.00 mi	Distance	Schw. 1-23	200
"	17	Paul Tingskou	WGC	132.50 mi	Triangle	BG-12B	
"	21	John Firth	GGC	169.20 mi	Out/Return	HP-11A	
"	23	John Firth	GGC	315.05 mi	Triangle	HP-11A	
"	31	David Marsden	ESC	106.00 mi	Distance	Blanik	
June	7	David Marsden	ESC	253.30 mi	Distance	HP-14	
"	8	Paul Tingskou	WGC	187.00 mi	Distance	BG-12B	
"	14	Harold A. Eley	RSC	326.00 mi	Goal	Schw. 1-26	!!!
"	14	Julian Audette	RSC	230.00 mi	Distance	HP-11A	
"	14	Gerald W. Dixon	RSC	55.00 mi	Goal	Schw. 1-26	200
"	14	Paul Tingskou	WGC	237.00 mi	Distance	BG-12B	
"	15	Dave Tustin	WGC	132.00 mi	Triangle	BG-12A	
"	15	Glen Buhr	WGC	132.00 mi	Triangle	Bergfalke II	200
"	21	David Marsden	ESC	192.30 mi	Triangle	HP-14	
"	21	Hans H. Lucas	MSC	196.00 mi	Goal	KA-6E	200
"	22	Harry Byrt	ESC	96.00 mi	Distance	HP-11A	200
July	1	Hans H. Lucas	MSC	130.50 mi	Distance	KA-6E	200
"	1	John Firth	GGC	140.00 mi	Out/Return	HP-11A	
"	2	David Marsden	ESC	157.00 mi	Distance	HP-14	
"	2	Dave Webb	MSC	203.00 mi	Triangle	Cirrus	
"	1	John Burrows	MSC	99.50 mi	Out/Return	KA-6BR	200
"	2	John Burrows	MSC	88.00 mi	Distance	KA-6BR	200
"	7	David Marsden	ESC	236.50 mi	Distance	HP-14	
"	7	Hans H. Lucas	MSC	229.00 mi	Distance	KA-6E	200
"	7	Dave Webb	MSC	297.00 mi	Distance	Cirrus	
"	7	John Firth	GGC	302.50 mi	Distance	HP-11A	
"	7	John Burrows	MSC	222.00 mi	Distance	KA-6BR	200
"	9	Dave Webb	MSC	220.00 mi	Out/Return	Cirrus	
"	9	John Burrows	MSC	159.00 mi	Distance	KA-6BR	200
"	9	Harry Byrt	ESC	184.00 mi	Distance	HP-11A	200
"	14	C. G. Thomas	ESC	195.20 mi	Distance	Schw. 1-23	200
"	16	C. G. Thomas	ESC	76.00 mi	Distance	Schw. 1-23	200
"	19	Hans H. Lucas	MSC	73.00 mi	Triangle	KA-6E	200
"	21	Harry Byrt	ESC	200.00 mi	Goal	HP-11A	200
"	22	J. H. Bisscheroux	MSC	170.00 mi	Distance	Skyl. IIb	?
"	25	Paul Tingskou	WGC	143.00 mi	Distance	BG-12B	
"	?	Doug Winger	SOSA	196.00 mi	Out/Return	Skyl eD	200
Aug.	2	Paul Tingskou	WGC	104.00 mi	Out/Return	BG-12B	
"	21	John Burrows	MSC	90.00 mi	Goal	KA-6BR	200

Please submit corrections or additions to undersigned.

For SAC Trophy Committee:

Mr. Paul Tingskou
187 Thompson Drive
Winnipeg 12, Manitoba.

F.A.I. AWARDS. Approved in July, August, and September 1969.

Gold C Badge

E.A. Mortis	Dart	C.N.G.C.
H.F. Byrt	HP-11A	E.S.C.
H. Kurlents	Diamant 16.5	M.S.C.
J.W. Johns	Foka	G.G.C.

Silver C. Badge

D.G. Duckham	Ka8	V.S.A.
G. Geyer-Doersch	Musger 23SL	M.S.C.
G. Symonds	Ka6E	M.S.C.
J.L. Chamberlin	Skylark 2B	M.S.C.
U. Werneburg	1-23	S.O.S.A.
R. Bower	Ka8	V.S.A.
D.J. Panton	Ka6CR	R.G.C.
A.W. Burton	BG12A	G.G.C.
L. Jenvay	Ka6CR	E.S.S.

Diamond C leg

G.H. Rynning	L Spatz 55 (Goal)	C.N.G.C.
E.A. Mortis	Dart (Goal)	C.N.G.C.
J.W. Johns	Foka (Goal)	G.G.C.
D.C. Winger	Skylark 3D (Goal)	S.O.S.A.
H.F. Byrt	HP-11A (Goal)	E.S.C.

Gold C leg

J. Burrows	Ka6BR (Dist)	G.G.C.
A.T. Fehr	2-32 (Alt.)	IND.
J. Brauer	Ka8 (Alt.)	V.S.A.

Frank Pellerin

(We regret that space does not permit us to include Silver C badge legs and C badges achieved.)
Ed.

ACCIDENTS AND INCIDENTS

HP-14

At Pincher Creek, Alberta, following recovery from a spin, a wing broke off. The pilot jumped, but was too low for the parachute to open, and he was killed. The pilot was experienced, and was currently C.F.I. of the Calgary Club.

Prompted by this accident, Dick Schneden has sent out a letter to all HP owners. He advises that none of the HP designs have ever gone through any load, flight on flutter test programs and strongly suggests that unmodified HP 9's, 10's, 11's, 13's, and 14's be placarded as follows: Max. speed, smooth air - 150 mph; rough air 120 mph; winch tow - 70 mph; air-plane tow (rough air) - 80 mph (smooth air)-120 mph; full flap - 80 mph. Altered designs should be derated from these values. Dick says "Lets all fly with caution so that we can stay alive to enjoy our sport in old age." (courtesy Seattle Glider Council "Towline")

Schweizer 2-22E

At Penhold, Alberta, during an air cadet instruction flight from a winch launch, the glider picked up an extra tow-rope at the tail. On release, the glider was found to be dangerously tail-heavy. The instructor and cadet loosened their shoulder straps and moved forward to increase nose down moment. The glider was about 5 feet above the runway when it was stopped by the extra rope, resulting in a heavy landing. Glider not noticeably damaged, instructor hurt his back. Pilot experience several hundred hours.

Musger 23SL

At Lake Placid, N.Y., after terminating a wave flight because of increasing cloudiness, and being unable to return upwind to the airport, an off-field landing was decided upon. Strong turbulence was encountered in the lee of a mountain on the way down. A short but adequate field was chosen for the landing, the pilot deciding to land downwind and slightly uphill. Arriving at the far end of the field and still in the air, a 180° turn was attempted to avoid flying into large boulders: a wingtip touched the ground and the aircraft cartwheeled, demolishing the cockpit area and breaking off the fuselage behind the wing; the fin also snapped off. The pilot was unhurt. Pilot experience approximately 50 hours, including a Silver C distance flight. An off-field landing had been made successfully by the same pilot in the Lake Placid area the previous week.

FOR SALE

Bergfalke III, two places, 1965, CF-SIC, complete with enclosed trailer, dual high altitude oxygen system, fully instrumented both seats. Ship is in excellent condition, ready to fly. Price: \$5,900.

Contact: John Urbas, 61 Capri Avenue,
Calgary 48, Alberta. Tel: (403) 289-8981

Ka6BR, with enclosed trailer, no instruments. Wings micro-ballooned and recovered 1968, fuselage stripped and repainted 1968; aircraft in excellent condition.

Contact: John Burrows, 3221 Edouard Montpetit, No. 20
Montreal, Quebec Tel: (514) 737-1045.

S.A.C. SUPPLIES

	<u>Each</u>
FAI Soaring Badges "A" and "B"	\$2.00
FAI Soaring Awards - Rules & Procedures	\$0.25 (5 for \$1.00)
FAI Sporting Code for Gliders	\$1.50
SAC Application Form for FAI Soaring Badges	\$0.10
SAC Instructor's Manual	\$1.50
SAC Student Hand-out Sheets	\$0.75
Student Progress Record Sheets	\$0.01 each sheet
Tephigram and Weather Briefing Form N-052	\$0.25 (5 for \$1.00)
Weather Briefing Form N-052 (1 sheet)	No charge
Application Form for Official Observers	No charge

	<u>Each</u>
SAC Blazer Crests (Navy)	\$6.50
SAC Decals	\$0.25
SAC Tie (Navy with Glider Design).....	\$2.75
 SAC Glider Pilot Log Book	 \$1.50
On Orders of 25 or more Log Books	\$1.25

Above items to be ordered through the Soaring Association of Canada.

P.O. Box 1173, Stn. "B"

Ottawa 4, Ontario

LATE NEWS

1970 U.S. Soaring Team

The Soaring Society of America has announced the ranking that will determine the U.S. team pilots for the 1970 World Soaring Championships, as follows:

1. George B. Moffat, Jr.
2. Wallace A. Scott
3. A.J. Smith
4. Rudolph T. Allemann
5. Benjamin W. Greene
6. John M. Brittingham
7. Richard H. Johnson
8. W. Ross Briegleb
9. C.M. Mears, Jr.
10. Richard E. Schreder

The list is the result of balloting by the first 10 U.S. pilots in each of the last two National Championships and pilots on the last International Team, rating each other in order of competitive ability.

The Team will be comprised of four pilots, two flying in the Open Class and two in the Standard Class. Pilot's choice of participation and class will be exercised in order of ranking. It appears likely that the top four pilots on the list will form the U.S. Team.

R.C. Gairns
Free Flight Editor

