

# Free flight

official publication of  
THE SOARING ASSOCIATION OF CANADA

ORGANIZATION - 1972

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| <u>FREE FLIGHT EDITOR</u>                     | Mrs. Sylvia Webb, 343 Dufferin Street,<br>FORT ERIE, Ontario.                       | 416-871-3411 (H)                     |
| <u>S.A.C. SUPPLIES AND<br/>ENQUIRIES</u>      | Soaring Association of Canada, P.O. Box 1173,<br>Station "B", OTTAWA, Ont. K1P 5R2. |                                      |

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| <u>AIR SPACE</u>   | D. Tustin*; N. Ronaasen, Box 1809, MEDLEY, Alta. T0A 2M0.   |                                   |
| <u>F.A.I. COMMITTEE</u>  | J. Firth, 542 Coronation Ave., OTTAWA, Ont. K1G 0MA.  |                                   |
| - <u>FAI Awards &amp; Records</u>  | C.M. Yeates, 33 Simcoe Place, HALIFAX, N.S.   |                                   |
| - <u>1972 World Contest</u>  | T.R. Beasley*   |                                   |
| - <u>1972 Canadian Nationals</u>   | A. Sunley, 4305 Wilcox Road, MISSISSAUGA, Ontario.  |                                   |
| - <u>1972 Western Contest</u>  | G. Thomas, 10837-127 St., EDMONTON 40, Alta.  |                                   |
| - <u>1973 Canadian Nationals</u>   | G. Buhr, 725 Rousseau Ave., WINNIPEG, Man. R2C 1Y1.   |                                   |
| - <u>1974 World Contest</u>  | Not yet determined.   |                                   |
| - <u>1974 Canadian Nationals</u>   |   |                                   |
| - <u>Official Observers</u>  | S.A.C., Box 1173, Station B, OTTAWA, Ont. K1P 5R2.  |                                   |
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| <u>INSTRUCTORS</u>   | W.J. Piercy*; J.D. Agnew, 4475 Rolland St., PIERREFONDS, P.Q.<br>D. Skinner, 3831 - 7th St. S.W., CALGARY 6, Alta.                                      |                                   |
| <u>INSURANCE</u>   | H. Yardy, 406 Summerhill Drive, PETERBOROUGH, Ont.  |                                   |
| <u>INTERNATIONALS-SEEDING<br/>RULES</u>                                    | C.M. Yeates, 33 Simcoe Place, HALIFAX, N.S.<br>R.F. Mamini, 10 Glenhaven Crescent, ST. ALBERT, Alta.<br>D.B. Webb, 343 Dufferin Street, FORT ERIE, Ont. |                                   |
| <u>METEOROLOGY</u>   | S. Froeschl, 1845 Brookdale Ave., DORVAL, P.Q.<br>J. Janzen, 14416-86 St., EDMONTON, Alta.  |                                   |
| <u>RADIO</u>   | C.F. Pattenson, 14 Davidson Dr., OTTAWA, Ont. K1J 6L9.<br>J. Johns, 2054 Kings Grove Crescent, OTTAWA, Ont. K1J 6G1.                                    |                                   |
| <u>SAFETY</u>  | A.N. le Cheminant*; D. Tustin*.   |                                   |
| <u>STATISTICS AND<br/>TROPHIES</u>   | J.D. Agnew*; J. Tinkler*;<br>R.C. Gairns, 130 St. Francis Blvd., CHATEAUGUAY, P.Q.  |                                   |
| <u>TECHNICAL COMMITTEE</u>   | T.R. Beasley*; D.J. Marsden*.   |                                   |
| <u>TRANSLATION</u>   | T. Reisner*; J.D. Agnew*;<br>L. Cotte, 11655 Laforest, MONTREAL 356, P.Q.   |                                   |



# Free Flight

THE NEWS LETTER OF THE SOARING ASSOCIATION OF CANADA

Issue 6/72.

November-December, 1972.

## S. A. C. NEWS

### AIRSPACE COMMITTEE REPORT:

The 1972 S.A.C. AGM gave our committee approval to approach the Ministry of Transport in order to point out our requirements for upper airspace for wave flying. Several letters were written and in May, I was able to meet with the M.O.T. HQ personnel who had responsibilities in the area we wished to discuss. A brief was presented to them which contained our thoughts on wave flying, high altitude cross country flying and glider I.F.R. The main point of our conversation was to clarify the wave requirements.

Last month (September) we received approval to proceed with a wave camp at Cowley, Alberta, in the safety of an airspace reservation. This reservation was approved for this meet only and will be renegotiated when all comments are gathered from the various agencies involved. Hopefully the outcome will be such that the reservation will become a permanent thing and can be requested on the spur of the moment by contacting Calgary ATC.

We have won 'round one' and I am confident that with perseverance on our part, and with continued understanding of the unique requirements of our sport by the M.O.T., we will eventually be granted unlimited use of the upper airspace.

Dave Tustin,  
Chairman, Airspace Committee



S.A.C. TECHNICAL COMMITTEE:

On 18th October, S.A.C. President Dave Marsden accompanied Terry Beasley on a visit to M.O.T. in Ottawa. Terry had submitted draft proposals regarding the aircraft and pilot licencing requirements for self launching sailplanes and we wished to discuss them in person with M.O.T. Other items were also discussed very briefly.

Self Launching Sailplanes:

We were very pleased to find that M.O.T. accepted our proposals, as presented, (with minor editorial changes). For convenience, these are reproduced separately. (See next page).

It is believed that the ease with which these were accepted was a result of 'making haste slowly'. Terry wishes to thank those clubs who replied to the questionnaire on the subject; particularly those who prepared constructive comments which were used.

It will be noted that these requirements are by no means "all encompassing." For example, they do not mention the man who wants to install an engine into an existing glider. This type of thing was briefly discussed with M.O.T. and we believe that such cases can be considered covered by the existing Ultra light requirements. The modified glider, for example, would be considered an SLS in the Ultra Light category, provided that it met the SLS definition.

Power Licences for Glider Pilots:

M.O.T. are receptive to suggestions regarding changes in the requirements for issue of a power licence to an experienced glider pilot. What are your views on this? Any glider pilot who later took a power course is invited to advise S.A.C. of his views. How many hours to go solo? Did his instructor feel that he really needed to fulfil the full requirements?

Glider Pilot Privileges for Power Pilots:

Under the present regulations a PPL holder can, legally, fly a glider. Should he have to obtain a glider licence by submitting an application with supporting recommendations from a Glider Instructor? Are you aware of any accidents or incidents attributable to a power pilot's glider inexperience? Is the fact that he holds a PPL sufficient to ensure that he knows enough so as not to try and solo a glider without proper instruction?

Comments on these last two items should be directed to Walter Piercy; comments on the SLS should be directed to Terry Beasley.

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(See Organization chart for addresses).

## S.A.C. PROPOSALS TO M.O.T. ON SELF LAUNCHING SAILPLANES

### 1.0 DEFINITION

To qualify as a SLS the aircraft must meet the following requirements:

- (a) Max. take-off run to clear 15 metre obstacle not to exceed 600 metres.
- (b) Min. rate of climb 300 metres in four minutes.
- (c) Max. stall speed 45 knots.
- (d) Min. (L/D) max. 20:1.

Note: M.O.T. may introduce a maximum seating (2) or max. payload figure; neither of which we consider unacceptable.

### 2.0 CERTIFICATION

Upon recommendation of S.A.C. an S.L.S. having a foreign type approval may be recognized as an approved type and be eligible for an M.O.T. Permit to Fly (Private). This will be renewable annually using the CCI procedure.

### 3.0 PILOT LICENCING

Approvals will be by endorsement of a glider pilot licence.

#### 3.1 Student:

Instruction in a dual controlled SLS may be taken under the supervision of an instructor endorsed as required under 'Instructor', item 3.3 following. No person shall solo an SLS unless he holds a student glider permit or any higher category permit or licence.

#### 3.2 Private:

An endorsement of a licence for SLS will be issued according to the requirements of either A, B, or C, following:

##### (A) Licenced Glider Pilot:

A licenced glider pilot, having a minimum of 10 hours as pilot in charge of gliders may apply for an SLS endorsement upon presentation of:

- (i) A letter of recommendation signed by an Instructor on SLS (see 3.3 following), and
- (ii) Evidence of a minimum of five hours flying time (as pilot in charge) on SLS, to include a minimum of 10 take-offs and landings and 10 engine air starts.

S.A.C. PROPOSALS TO M.O.T. ON SELF LAUNCHING SAILPLANES (Cont.)

3.2 (B) Licenced Power Pilot

A licenced power pilot may apply for an SLS endorsement (which will be by endorsement of a private glider licence) upon presentation of items (i) and (ii) as in (A) above.

(C) Ab-Initio

A student who has trained ab-initio on an SLS may apply for an SLS endorsement (which will be by endorsement of a private glider licence) upon presentation of:

- (i) A letter of recommendation signed by an Instructor on SLS (see 3.3 following);
- (ii) Evidence of a minimum total of 15 hours flying time as pilot in charge of gliders, SLS, or powered aircraft.
- (iii) Evidence of a minimum of five hours flying time on SLS, as pilot in charge, to include a minimum of 10 take-offs and landings and 10 air starts.

Note:- Item (iii) may be included in item (ii).

Note: Where no two seater SLS is available, the required flights (for (A) or (B) only) may be made in a single seat SLS, provided that they are under the direct supervision of an instructor, endorsed as in 3.3 following, or, where no such instructor is available, are under the supervision of a licenced glider pilot holding both an instructor endorsement and a power licence.

3.3 Instructor

A licenced pilot holding a glider instructor endorsement may be endorsed for instructing an SLS on presentation of a letter of recommendation and showing evidence of a minimum of 10 hours flying time on SLS, as pilot in charge, to include 20 take-offs and landings and 20 air starts. If the applicant holds a private pilots' licence (aeroplanes) these figures may be reduced by one half.

3.4 Written

Applicants for endorsements in either the private or instructor category shall write the M.O.T. examinations as required for private pilots' licence (aeroplanes). This requirement shall be waived in the case of aeroplane private pilot licence holders.

4.0 AUXILIARY POWERED SAILPLANES

An auxiliary powered sailplane (APS) shall be defined as a glider fitted with an auxiliary propulsion system incapable of meeting the take-off and climb requirements for the SLS. It shall not be permitted to attempt to take-off under its own power and shall be considered as a glider for purposes of aircraft and pilot licencing.

'POINTS TO PONDER'

The day dawned bright and clear. The training operation seemed to commence almost with the sun, shattering the silence in the campground. "Oh well, time to get up anyway! Looks like a good day, think I'll call "Met" after breakfast and see what conditions are expected to be aloft". The towplane and 2-22s are going up and down with almost monotonous regularity. The forecast is for a real 'boomer' with thermals to start around eleven o'clock. Must preflight my bird for that diamond goal flight that I've planned!

The training operation is still going, interspersed with the occasional private ship going up on pilot training or for a check on conditions. Shortly after eleven, the gliders begin their aerial dance, slowly climbing into the still-blue sky. "Time to get down to the flight line." There is activity all around now, the towplane is down for refueling and most of the private ships are being towed down to the flight line. Pilots are comparing notes on where they are going and deciding on a take-off order. A 2-22 sits ready with student and instructor waiting for the towplane, which is now lumbering back from the fueling area. The flight line crew has the tow rope hooked up almost immediately - the glider crew is ready - the take-up slack signal is given - and then all-out for take-off. Another routine operation.

We pause now to look up at the sky. The two gliders that are airborne are still climbing. 'No doubt about it - this is going to be a day to remember.' I'm number two to go after a Cherokee - time to do my final checks. The song of the towplane changes as the 2-22 releases and the tug starts down. We idly watch as the towplane descends through all that hard-gained altitude. The pilot lines up on final with the tow rope whipping and snapping behind. He has levelled off at some 200' up to clear the nearby hydro wires - well by them now - the nose drops as he dumps off his altitude - it's a thrilling sight - "Wow! this is going to be a real 'greaser'." It was not to be - as the towplane slammed into the ground shearing off the under-carriage while the prop chewed up the sod until the engine stopped with the prop blades all twisted and bent. It hit at such a steep angle that just before it ground to a halt, it teetered up and in a final movement smashed down inverted.

We had all stood transfixed by this terrifying sight but now we all ran towards the wreck. Both lap and shoulder harnesses

POINTS TO PONDER (Cont.)

had broken pitching the pilot into the instrument panel - his face was covered with blood. Somehow through a superhuman effort he had managed to stagger clear, undoubtedly from a fear of a fire, but it didn't materialize. We were all clustered around but the pilot had collapsed and was unable to move.

'Where was the first aid kit?'                      No one knew.

Better get a fire extinguisher in case a fire starts. The only one we could find was in the towplane. We wondered when it had been checked for contents.

The blood had been stopped with a collection of handkerchiefs and the pilot was carefully loaded onto a board - gently placed in a stationwagon and conveyed to hospital.

We all stood around staring at each other dumbfounded. The unthinkable had happened. Why? Was it pilot error? Was there an aircraft malfunction? It didn't really matter at this point as we were confronted with a very nasty picture. We were right on one count anyway - it was certainly a day to remember!

This story could have ended much more tragically than just the write-off of one towplane - the pilot could have died because we were unprepared for the possibility of an accident. No club likes the thoughts of airplanes being bent and bones being broken, but if we are to be realistic we had better consider the topic at great length.

Where would you stand in a Court of Law if your emergency procedures were found wanting?

Does your club have adequate fire extinguishers spotted at strategic locations?

Where is the first aid kit? Is it comprehensive enough for any eventuality? Is there a stretcher available?

And what about emergency procedures? Who is in charge of the operation? What would you do to extricate a pilot, who has back injuries, from a 2-22 for instance?



POINTS TO PONDER (Cont.)

As the Canadian gliding season is just about at an end, it would seem to be an ideal time to do a survey of your club's safety equipment and emergency procedures. If they are found to be lacking, get a committee going to rectify the situation so that you can face the '73 season with confidence. Perhaps you can also include some lectures on first aid for at least the instructors and field managers.

Let's borrow the Boy Scouts motto and 'Be Prepared'.

Dave Tustin, Chairman,  
S.A.C. Safety Committee.

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"SAFETY IS NO ACCIDENT - courtesy British European Airways.

Another cliché is "Safety is everybody's business" and - as with any cliché it can be dangerous. Everybody's business so easily becomes nobody's business unless "everybody" includes you...you.. and you.. and me. It's personal involvement that really counts in this safety business and if you see an unsafe practice or a situation that could lead to an accident, do something about it! Don't assume that someone else is going to take action. Just because you may be in a junior position, doesn't mean you don't have the responsibility, or are barred from pointing out a weak area in the system.

Even if your analysis is wrong, your action may well trigger off an investigation that can turn up another area that merits attention. At the very least, it will earn appreciation of your supervisors for your effort to improve the situation.

Safety is simple common sense, and it's you the user that can get things changed if they are not right. Don't live with an unsafe procedure. Take the appropriate action to get it corrected."

(The above article was taken from "The Vancouver Soaring Scene").

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S.A.C. NEWS (Cont.)

F.A.I. AWARDS AND RECORDS

C.M. Yeates

Diamond "C" Badge

No. 18        ----        Peter Lamla (Cirrus) -- Vancouver Soaring Assoc.

(At the age of 24, Peter is the youngest recipient of a Diamond "C" badge in Canada. The following is the text of a letter from Peter Lamla to C.M. Yeates dated August 14, 1972):

"Once again I have something to claim, my last diamond. I finally managed to fly more than 500 Km. As a competitor in the U.S. Open Class Nationals this year, I had ample opportunity, especially since they were held at Minden, Nevada.

"The soaring was just terrific. These were the 2nd U.S. Nationals that I attended, again as in Ephrata last year, to acquire some high caliber experience. One can't help but learn when flying with the likes of Dick Screder, John Ryan, Rudy Allemann, Carl Herold and many more. From 9 speed triangles I completed all but one. The best I could do on any one day was 20th, out of 55 contestants. If it hadn't been for a silly camera mistake (which cost me 12 places) I would have managed a final standing of 24th or 25th. There'll be more details in the Soaring Magazine.

"Dick Cook was down at Minden too. I asked him what there was to do after the last diamond? He replied that I could always try to break his Canadian (Citizen) distance record of 451 miles. What are the procedures for me to follow if I would like to claim a new Canadian (Citizen) 500 Km. speed triangle record with the flight for my diamond? The old record (John Firth) was 43 m.p.h., I did it in 48 m.p.h. and I am sure I can get the official contest tape from the computer that they employed. Is my listing of the speed in Soaring Magazine sufficient?

"From now on my efforts will be directed towards the Canadian contest scene, my eventual goal being a place on the Canadian International Team."

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(A "Citizens" record is a flight made by a Canadian outside Canada. Flights made by Canadians within Canada, are categorized as "Territorial" records. Ed.)

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F.A.I. AWARDS & RECORDS (Cont.)

C.M. Yeates

Canadian Territorial Record:

Distance (Fem.)            93 miles            Ruth Thumm (SOSA G.C.)

This new record exceeds the previous record set by Christine Pattinson (Mrs. John Firth) back in May of 1965 by 11 miles.

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LADIES IN THE NEWS

Kitty Halbroth (Ka6) completed her Silver "C" badge with a 5 hour duration flight at Hawkesbury, Ont.

Taken from M.S.C's "DOWNWIND".

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Hazel Flint (1-26) made a 4 hour 42 minute flight at Winnipeg recently. This was Hazel's seventh flight in the 1-26 and she landed after 7 p.m.

Taken from W.G.C's "SOCKTALK".

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1ST INTERNATIONAL WOMEN GLIDING CONTEST:

LESZNO, POLAND -- JULY 1973.

Competitors must have a Silver "C" badge and not less than 150 hours flown as pilot-in-command.

Interested applicants should write to the  
Chairman, S.A.C. F.A.I. Committee, at the  
official S.A.C. address.

1973 S.A.C. ANNUAL GENERAL MEETING:

The 28th A.G.M. will be held in Kingston, Ont., mid-March 1973. Notices of motion for this meeting should be sent, a.s.a.p., to David Marsden, S.A.C. President.

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CLUB AND FLYING STATISTICS - 1972:

In order to obtain statistics in good time, not long after the end of the flying season, will club officials please send in their 1972 returns on the form included at the end of this newsletter (page 43). Send the completed form to:

R.C. Gairns, 130 St. Francis Blvd.  
CHATEAUGUAY, P.Q.

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1973 CANADIAN NATIONALS:

The 25th Canadian National Soaring Championships will be held in Winnipeg, Manitoba. Potential competitors are requested to read and complete the questionnaire at the back of this issue (page 45) and return it before 31st January 1973, to Glen Buhr, 725 Rousseau Avenue, Winnipeg, Man. R2C 1Y1.

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1974 WORLD CONTEST - WAIKERIE, S. AUSTRALIA:

The 14th International contest is scheduled to be held from Saturday, 12th January to Sunday, 27th January 1974. This will be preceded by a practice period from Sunday, 6th January to Friday, 11th January 1974.

As stated on page 13 of Free Flight Issue 3/72 (April-May), anyone interested in going to Australia should write to T.R. Beasley, 173 Leslie, Roxboro 970, P.Q. In your letter please indicate whether you are interested in going:

- (a) at your own expense entirely;
- (b) at your own expense provided 50% travel cost is paid;
- (c) only if S.A.C. can pick up most of the tab.

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MC CREARY WEEKEND

Russ Flint (W.G.C.)

From where Bill Rehaluk and I were standing at 6.30 a.m. on Saturday, September 16th, it looked as if the weekend was going to be a washout! Everyone else had gone up to McCreary the evening before and would be cosily ensconced in their beds in the hospitable atmosphere of the local hostelry. We, however, had agreed to bring the Berge up by air - behind Ed Evanko's Cessna 180. Ed was due to arrive at 7.00 a.m. for the start of the trip, but standing, as we were, in the pouring rain and pitch dark coldness of the WGC gliderport that morning, we decided the best thing to do would be to get back into our respective automobiles and go back to sleep. At 8.15 we were awakened by the honking of the geese on our neighbourhood Hutterite colony; at least that meant the wind must be from the South! I opened my eyes and there above us was a patch of blue sky. We roused ourselves and went for a run down to the windsock and back to get warm. Ed arrived shortly thereafter, so we made our preparations and took off about 2 hours late.

The sky was clearing and the day was beautifully promising, but our problem came as we rounded the Southern tip of Lake Manitoba, for the Southerly wind had changed to a 40 m.p.h. Nor'Wester. What should have been a 1½ hour trip took 2½ hours. Flying at max. aero-tow speed (65 knots and sometimes 70!) through somewhat \* bumpy air for that length of time, is no joke. However, we arrived without mishap and landed gently enough, though as we stepped stiffly out from the cockpit to see the towplane land, we were somewhat staggered to see the wind flip him way up onto one wheel and drop him back to earth a few yards into the adjacent cornfield!

The gliders were all ready by this time (6 of them altogether) and most of the assembled company had got bored (or cold!) waiting and gone back into town for lunch. Soon after they arrived back, however, the wind began to drop somewhat and had veered slightly towards the North, so we sent Vern Keats and Dick Higgins up in the Berge to scout the skies for the first flight of the weekend at 14.51. Eleven flights were made that afternoon, two of them lasting close to half an hour, and a few of us claim to have found genuine hill generated lift, mostly closely associated with some tatty clouds at 2000' - 3000' having all the appearances of roll clouds, with lift up one side and sink down the other. By about 5 o'clock it was raining again and cloudbase was closing down rapidly so we called a halt.

Vern hosted a casual party on Saturday evening, from which we all retired contentedly to bed about midnight. On Sunday morning we were treated to a breakfast by the town of McCreary in one of the local

McCREARY WEEKEND (Cont.)

restaurants. This was a really friendly gesture, and is characteristic of the people of that town. The day had dawned cool and clear with some bands of stratus high overhead and some genuine lenticulars about 10 miles to the South. Flying began at 10.00 a.m. with a survey into possible wave lift by the Fauvel. Unfortunately the towplane and glider had a problem at about 5000' and the towplane had to release. The rope fell into the forest and vanished - but the locals are going to keep an eye open for it. The wind was actually very light that morning, and Norm Taylor reported back by radio that he had no evidence of lift at all up to 5000'. By the time he got down again, all the lenticulars had disappeared too! As the day warmed and the wind increased in strength a bit, flight times improved. Lift was a mixture of thermal and hill-generated (call it 'wave' if you like - it certainly wasn't ridge).

Jeff made the longest flight of the day - over 2 hours - almost all in thermal lift, while Len Pennie spent an hour in a 'wave'. Vern and I both had flights approaching an hour in the Berge. Tony made a short cross country flight to a ploughed field about 10 miles from McCreary (all those little towns look just the same from the air, don't they!) and Hazel Flint was nearly caught out the same way, but realized in time to scrape her way back to the field and frighten us all by appearing at tree top height out of no-where.

We made 22 flights that day, two of which were Fam flights in the Berge. The day closed with everyone very satisfied after a pleasant weekend of 'different' flying amongst good company in a friendly town.

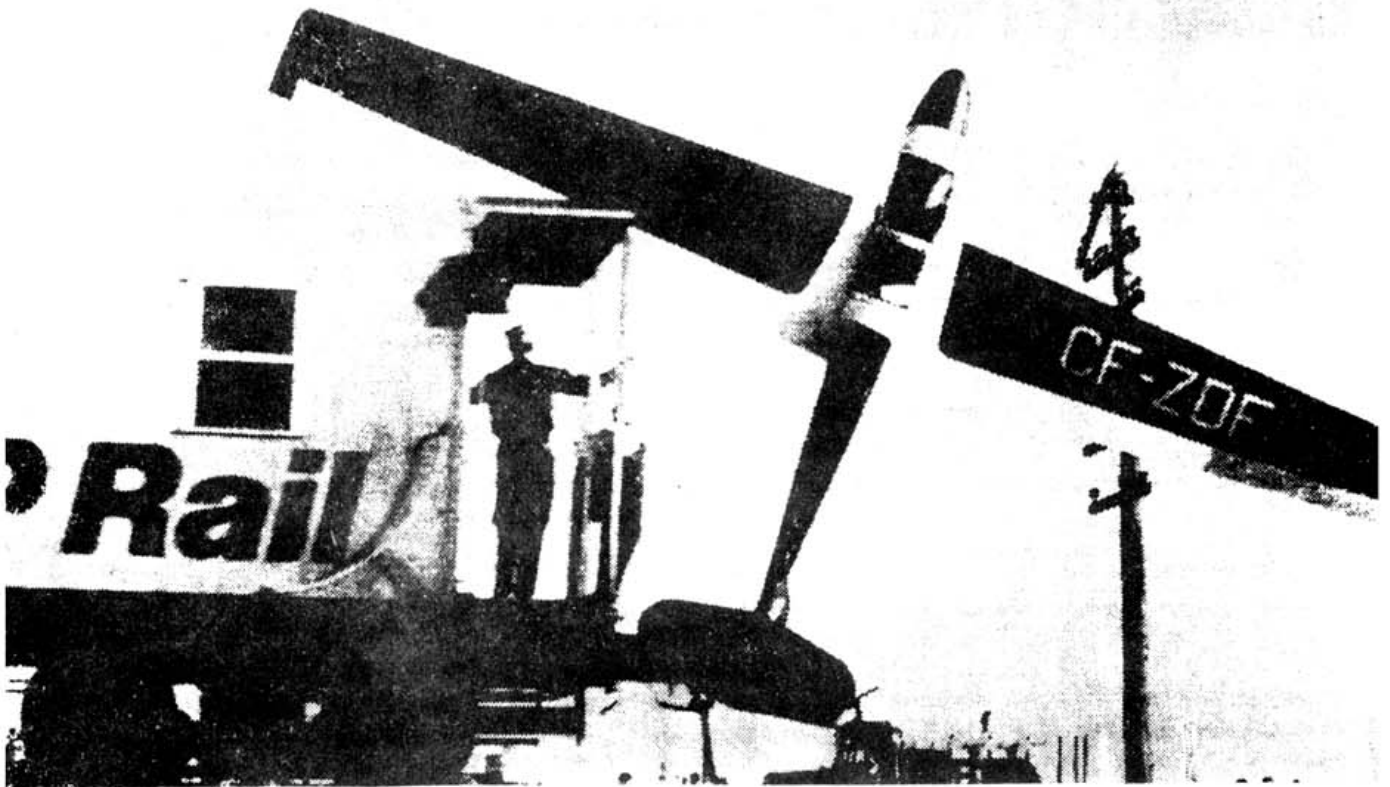
Special thanks are due to Dave Tustin and Jeff Tinkler for making the arrangements, Helen Tinkler for toast and coffee, and Ed Evanko for towing.

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(Reprinted from Winnipeg Gliding Club's "SOCKTALK").

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(An appropriate article written by Dave Tustin entitled 'Cross-country tows can be fun!' will be featured in a future issue of Free Flight. Ed.)



WE ALL HAVE OUR HANG-UPS: A 300-pound glider, owned by the Regina Gliding Club, is seen hanging from telegraph wires after the pilot strayed too far from the airfield and was forced down south of the Regina Golf Club by opposing high winds. The pilot managed to climb from the cockpit of the light craft, slide down a wing to a telegraph pole and then to the ground. He received no injuries in the accident which occurred about 7 p.m. and damage to the glider was slight. A crane was brought to the scene to retrieve the glider. (From the Regina "Leader-Post" - photo by Pat Pettit).

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(The following report of the above accident was written by Harold Eley of Regina in a letter to Dave Tustin (S.A.C. Safety Committee) dated June 22, 1972. Ed.)

"As you may have seen from the papers, we have had an accident with our 1-26. For S.A.C. records, I wish to make a few comments on what happened and how.

"Briefly, the pilot was very short of the field on landing and ended up unhurt in some telegraph wires. On heading towards the field, he realized he was in difficulty, but continued on, hoping to just clear the wires and make a landing in an open area on the other side.

Cont'd.

Accident to 1-26 CF-ZDF (Cont.)

"This was a classic case of trying to soar downwind of the field in a strong wind of around 30 mph. The flight was 30 minutes long, so the pilot was "staying up", but was just maintaining height and not climbing fast enough to keep at a safe glide angle back to the field. In addition, there were a lot of obstructions, including a railway with its two fences, and telegraph lines; a telephone line; a baseball field, and another fence. A golf course ahead of the railway was quite crowded and he didn't wish to endanger anyone by landing. He continued on, putting the nose down and then tried to pull up over the wires. He must have just about stalled as he touched the top wires, because he settled against the skid with several wires slipping between the skid and wheels. As he fell back, the wires hooked the back of the skid and the fuselage pointed vertically upward. He climbed out, slid down the wing to the telegraph pole, along the cross arms, and down the pole. He was unhurt except for his ego.

"Naturally there was considerable excitement around the airport with fire trucks and an ambulance. We hired a crane, lifted the glider by the tow hook and brought it down without further damage. One aileron only was slightly damaged and will need repair.

"The pilot is fairly young, and obtained his power license last year and now has 45 hours power time. He was still training for his glider license. Converting from power may be a contributing factor in either causing him to overestimate the glide angle of the 1-26 (quite high relative to power) or in thinking in terms of being able to add power. In any case, the message hadn't got to him not to fly very far downwind. This message is now indelibly etched in his mind.

"The strength and docile character of the 1-26 probably prevented serious injury and damage and we were greatly relieved by the way it turned out.

Signed: H.A. Eley

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LINES ABOUT LINES

R. Carlson (SOSA G.C.)

Rope. That yellow streak that connects you to the tug. Common but necessary. You have thought and practiced rope break techniques. So have I. Despite its crucial function we accept rope as commonplace.

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

Traditionally, rope was made of either hemp, manila, sisal or cotton. Usage of these fibres is declining rapidly as man-made fibres gain prominence. The three man-made fibres in use, in order of volume, are polypropylene, nylon and polyester. Why man-made over natural? Basically because of performance. None of the man-mades are cheaper to buy than the natural fibres. They are, however, cheaper to process. The finished properties are not only better, but more reliable.

The comparisons are:

|                                     | <u>Polypropylene</u>                                    | <u>Nylon</u>               | <u>Polyester</u>                |
|-------------------------------------|---|----------------------------|---------------------------------|
| Cost/lb.                            | low   | medium                     | high                            |
| Strength/lb                         | low   | high                       | can be equal to nylon           |
| Elongation                          | low   | high                       | low                             |
| Rot Resistance                      | high  | high                       | high                            |
| Colour                              | usually yellow<br>or some other<br>colour               | white<br>(rarely coloured) | white/grey<br>(rarely coloured) |
| Abrasion Resis-<br>tance dry or wet | low   | high                       | medium                          |
| Sunlight Resis-<br>tance            | good till anti-<br>oxidant used up<br>then catastrophic | gradual<br>loss            | gradual<br>loss                 |
| Buoyancy                            | floats  | sinks                      | sinks                           |
| Shock Absorbancy                    | very low  | high                       | medium                          |

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

LINES ABOUT LINES (Cont.)

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

The selection of cordage for an application, as is most material selections, a compromise between properties, and cost. To illustrate: what makes the best tow rope? Since we all like silky smooth tows despite the antics of thermals or tow pilots (who is for 80 knots over the fence?) to thrash us about, shock absorbancy is of real interest. Aircraft structures have stress limitations. Cost is a very real factor, initially and for replacement. Spliceability is needed as is ease of handling. A  $\frac{1}{4}$ " diameter braided nylon line handles easily and gives a very soft tow. It is, however, expensive; splicing techniques are not widely known, and ironically it is too strong. Strength levels compatible with aircraft structures result in small lines (3/16" dia.) a size difficult to handle and nearly impossible to splice. Polyester is out because of high cost. Polypropylene is cheaper, is harder riding in relation to nylon, but has a size/break strength combination that is compatible with aircraft structures. Polypropylene's greatest disadvantages are poor sunlight resistance (not a real factor as long as lines are lost frequently) and shock absorbancy. Polypropylene will fail at quite low stress levels if shocks are frequent and hard enough. It should be noted too that the Ministry of Transport, Canadian Coast Guard Service, forbids the use of polypropylene cordage in all life saving apparatus where the cordage is exposed directly to sunlight while stored ready for use.

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

What makes the best tie down line? It depends where you want the lift and gust loads to be absorbed. If you want the aircraft to absorb all the loads, use heavy steel chain. If you want the tie down to absorb the load use nylon, at a proper safety factor load. DO NOT use manila. A broken bird will probably result. Natural fibres or polypropylene should not be used in continuous outdoor exposure.

LINES ABOUT LINES (Cont.)

Depending on size, nylon should be replaced every two years at least, small lines every year if outside all year. Watch air pollution, it can be worse than sunlight. Rot and U.V. degradation are insidious. Failure can and has occurred without warning. Polyester can be a compromise if you want the aircraft structure to absorb part of the load, and the tie down the rest. Be sure that the anchor can absorb and transmit the load to the ground. Good cordage selection is useless if the tie down does not hold. Also watch your angles of tie down. Straight down and short has minimum elasticity, maximum upload on the anchor. A long sloping tie down can have lots of elasticity, minimum up load and maximum side load on the anchor. Snug short lines, lift dumping attachments, positioning of the wing, and a sheltered location is best. Of course, the very best is a dry hangar or trailer. Cover or aircraft tie downs on a trailer are best made of polyester because of maximum sunlight resistance with moderate elasticity/shock absorbancy. Shock cord is a good alternative. The best tarpaulins (and the most expensive) are Hypalon or Neoprene coated nylon. Vinyl coated nylon is a good alternative.

Tying knots and splicing cordage are always subjects of great fascination, particularly now that macrame is fashionable. Knots are dangerous as they usually result in a loss of 50% of the useable strength of the line. Some knots, properly called bends, can yield 80% of the straight line strength. A good splice can give 95% of the straight line strength. All can slip if not properly done. Remember that the man-made fibres are usually more slippery than natural. Consequently more care is needed in setting the knot, bend or hitch. At least 2 extra tucks are necessary for a good short splice in laid rope. Splice whenever possible. Splices are preferred to knots, bends or hitches. A hitch, incidentally, is a bend that joins two lines.

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

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

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(Reprinted from the "SOSA News")

A SNIPPET OR TWO FROM HOPE

Christine Timm

Thanksgiving Weekend produced a mixed bag, but Sunday turned into a good wave day in which Lothar Schaub (Ka 6E), Helmut Gebenus (Phoebus), Derek Duckham (Ka 8) and Jake Brauer (Ka 7) gained considerable altitude from which they could enjoy the Fall scenery - (there may have been others, sorry if I missed you). Bernie Brayshaw made use of his altitude to fly west to Chilliwack where he was forced to land, since the valley was clogged with smoke from the slash burning. Paul Kalmar (1-26) attempted a flight to Boston Bar up the canyon, but was forced back by gathering clouds and after a few tense moments, made it safely back to the field. Helga Lamla rounded the weekend off by providing a Thanksgiving atmosphere when she cooked a delicious turkey dinner for the gang.

It appears that October 14 was another 'wave' day although of an unusual nature since it was an easterly flow of air which created the wave this time. A number of our pilots took full advantage of this lift, some remaining to fly locally while others ventured into the Fraser Valley. Skies were crystal clear aloft, but smoke haze from slash burning caused some unpleasant pollution problems closer to the ground.

Both Bernie Brayshaw (Ka 6CR) and Peter Lamla (Cirrus) took full advantage of the height to be gained and then flew downwind, checking in with Abbotsford Tower while passing through and eventually dove down to duck under the smoke haze and call in to Langley Tower before landing there.

They were apparently welcomed by all, including one of our members, Cliff Blair, who was ready to give assistance in getting them clear of the runway. The only shadow cast on their flight was the time it took for the retrieve and the consequent loss of a piece of the Barbecued Salmon which Bob Lorenzo had caught and prepared. I gather only the eyes were left by the time they returned!

The following day proved less exhilarating although a considerable amount of training was accomplished and some of the experienced pilots were keeping their ships aloft on the east and south-east face of Dog Mountain.

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(Reprinted from "The Vancouver Soaring Scene")



NO PARTICIPATION IN COMPETITIONS WITH CLOUD FLYING - H.W. GROSSE.

Hans Werner Grosse, a well-known name in our sport, took a strong view in his letter to the organizers of the "Daily Telegraph" financially supported soaring competitions at Dunstable, England. In his letter he stated that he will not take part in competitions where cloud flying is permitted. Grosse declined the invitation. His letter reads as follows:

"I still had hoped that after the tragic happenings in Vrsac, the competitions at Dunstable would not allow cloud flying. Since this is not the case, I will, as I said during my telephone call, not take part in these competitions.

Unfortunately, the discussions regarding this issue before Vrsac, had been misdirected by Philip Wills' statement that there are two types of competition flying: (a) such where gliding associations successfully dealt with authorities in aerospace and consequently are allowed to practice cloud flying and hence master it --- these pilots being pro cloud flying and (b) such whose associations failed in securing airspace for themselves. These do not master the high art and hence its pilots are opposed to cloud flying.

This, although sounding quite reasonable, is far from being the truth. Speaking for myself, I am quite able to fly in cloud as other top pilots do. Nevertheless, I have decided not to take part in competitions where cloud flying is allowed.

I do not think that it is possible that 30 or more pilots in 15 or more clouds can give precise reports on one frequency only, and thereby guarantee their safety. On days during which only cloud flying is possible, this frequency would be hopelessly crowded, in which case I would rather not make use of the advantage that cloud flying may offer, but would rather leave this to the heroes or the thoughtless. But because I do believe that any competitions should take place under conditions which are equal to all, and that the best but not the most daring should win, I will stay home.

However, we must bear in mind the responsibility that we have toward our sport in the entire world. Up to now, soaring enjoyed a very positive image. However, Vrsac did leave the impression in the public's opinion, that soaring is dangerous and that, at

...

H.W. GROSSE'S LETTER (Cont.)

least as far as competition pilots are concerned --- similar to racing car drivers --- you could associate them with a bunch of psychopaths, who are willing to risk their lives as well as those of their competitors, or even the lives of non-participants.

The British Gliding Association tried to explain to me that in cloud flying, according to the BGA system, the danger factor is reduced to less than 50% in comparison to Vrsac. Does that mean --- only one dead pilot? Even an unnecessary collision without any fatalities would be mentioned in the news media of the world and strengthen the stand of the opponents to our sport."

This was the context of the letter written by H.W. Grosse to the BGA who were disappointed in his decision, but accepted it gracefully.

In the meantime, Dunstable's competitions are over. Invited participants included: F. Kepka, Poland, 3rd Standard Class - Vrsac; H. Reichmann and Klaus Tesch. H. Reichmann was applauded during the Opening Ceremonies when he stated that he would not enter cloud because of collision risks. The winners at Dunstable in the open class were - Williamson, England; Burton and Delafield, also England. In the standard class - Fitchitt, England; Greaves and Cardiff, also England.

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(Editor's note: The letter written by Hans Werner Grosse first appeared in the German "LUFTSPORT" and was translated by G. Geyer-Doersch of M.S.C.)

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COWLEY WAVE CAMP - 1972

Dick Mamini (E.S.C.)

There were some very significant developments at this year's Thanksgiving Wave Camp at Cowley. For the first time soaring pilots were able to fly to 29,000 ft. with M.O.T. clearance. This came about mostly through the efforts of Dave Tustin (W.G.C.) and Dick Mamini. Below is a report on that wave camp and a reprint of the restrictions imposed by M.O.T.

The following pilots and ships were in attendance:

|            |  |                  |
|------------|--|------------------|
| Calgary    | Bruce Hea<br>Bruce Gowans                              | Standard Libelle |
| Calgary    | Garth Schieb<br>Clive Beddoes                          | L-Spatz 55       |
| Calgary    | Mike Kiss  | H301 Libelle     |
| Calgary    | George Blunden   | PA11             |
| Calgary    | Klaus Stachow  | Phoebus          |
| Calgary    | George Dunbar<br>Eric Mortis                           | Dart             |
| Lethbridge | Harold Cook  |                  |
| Edmonton   | Don Bentley<br>Ron Stokes<br>Doug Dickson              | Zugvogel 111 B   |
| Edmonton   | Dick Mamini  | HP-14            |
| Regina     | Julien Audette<br>(Cancelled due to towplane problems. | HP-11A           |
| Regina     | Numerous 1-26 pilots                                   | 1-26             |

The group who ventured to Cowley this year were rewarded with unusually fine weather, but this good fortune was dampened somewhat by a series of misfortunes which attenuated the flying.

Saturday, October 7, 1972

In the early morning we were greeted by the sight of a beautiful lenticular standing over the Livingstone Range and the weather on the ground was very warm and pleasant. However, Regina's towplane had

COWLEY WAVE CAMP (Cont.)

come out second best in an altercation with a hangar in Swift Current and therefore we were obliged to enjoy the fine weather on the ground! Late in the day the Regina PA18 did limp in but they could only get 2,100 RPM out of her and were unable to tow. Meanwhile George Dunbar and Eric Mortis were trying to repair burned out bearings in their trailer axle. Don't forget to repack those wheels once in a while.

Sunday, October 8, 1972.

Hallelujah! 12 o'clock, LOW, a PA11 was spotted sporting a shiny new tow hook. George Blunden, we love you!

You will note in the attached M.O.T. correspondence that a number of flying restrictions were imposed on us this year. It is hoped that we can work out a system of in-flight clearances that will lessen this problem in the future.

As it worked out, both Stachow and Mamini reached the limit altitude of FL290 (29,000 ft. approx.) and each reported 600-800 ft./min. lift at that altitude. Spoilers, flaps, etc. were flung into the airstream to avoid entering the sacred zone which hung ominously just inches over their heads.

Radio contact was made with Calgary Center with the best reception on 124.8 mhz, the en route frequency. The transmissions were broken below 16,000 ft. but were 5 x 5 from FL180 up. We feel confident that an in-flight clearance system can be worked out with the M.O.T.

Monday, October 9, 1972

Several pilots flew for two or three hours in a combination of ridge and thermal lift off the Porcupine Hills, however, after hearing of George Blunden being forced to turn back from his flight to Calgary and observing the rapidly approaching cold front in the vicinity of the Chain Lakes, everyone landed and quickly derigged.

Summary

The weather for the entire weekend up until late on Monday was ideal and it is hoped that next year more pilots (and towplanes) can be enticed to fly in this area which surely must be one of the most interesting soaring sites in the world.

(See next page for Flying Rules imposed by M.O.T. Ed.)

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The above article and the rules that follow have been taken from the Edmonton Soaring Club's "TOWLINE".



FLYING RULES IMPOSED BY M.O.T.

1. The area will be bounded by the following co-ordinates:

50 degrees N; 114 degrees W.  
50 " N; 114 " , 30 min W  
49 " , 35 min N; 114 degrees, 30 min W  
49 " , 35 " N; 114 " W

2. It is understood that low level airways B14, G1, V300 are excluded from this reservation. Sailplane activity is not permitted within the Block Airspace.
3. Altimeters will be set to standard pressure on passing 18,000 ft.
4. Within the High Level structure, the airspace above FL230 up to and including FL290, will be available for sailplane use within the designated area.
5. The Soaring Association of Canada will be responsible for the maintenance of separation between gliders within the designated airspace.
6. It is expected that approximately 10 to 15 sailplanes will attend the meet.
7. The period during which flying will take place will be from 0800 MDT to 1930 MDT, weather permitting.
8. Many of the sailplanes are equipped with VHF transceivers and an attempt will be made to contact Calgary Approach Control on 119.3 MHz to evaluate the feasibility of obtaining in-flight clearances. If this procedure is successful it could eliminate unnecessary paperwork and avoid the situation where airspace is reserved during periods which subsequently turn out to be unsuitable for mountain wave flying. A similar procedure has been in effect for many years in the U.S.A. and to my knowledge the F.A.A. has had fewer problems with in-flight clearances than with telephone clearances.

It is hoped the results of this operation will be evaluated with the objective of setting up workable procedures for the safe and efficient utilization of this airspace. The unique combination of topographical features and meteorological conditions which exist in the Livingstone area are ideally suited to the development of mountain waves. Also, it is desirable to vector commercial aircraft around areas of known mountain wave activity to avoid severe CAT which is often associated with this phenomenon. Therefore, it would seem to be to the mutual benefit of both sport aviation and the commercial carriers to work on this problem.

SOARING ASSOCIATION OF CANADA  
Box 1173, Stn. B, OTTAWA, Ont. K1P 5R2

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List of Supplies

| <u>ITEM NO.</u> | <u>D E S C R I P T I O N</u>                              | <u>P R I C E</u> |
|-----------------|---|------------------|
| 1.              | F.A.I. Soaring Badges - "A" and "B"                       |                  |
|                 | (a) Button - Screw Back .....                             | \$ 3.00 ea.      |
|                 | (b) Button - Clutch Back (Tie Back) .....                 | 3.50 "           |
|                 | (c) Pin - with Safety Catch .....                         | 3.50 "           |
| 2.              | F.A.I. Soaring Badges - "C" and above. (Prices in Item 5) |                  |
| 3.              | " Soaring Awards - Rules (Booklet) .....                  | \$0.25 (5/\$1)   |
| 4.              | " Sporting Code - (Booklet, Eng. & Fr.) .....             | 1.50 ea.         |
| 5.              | S.A.C. Application for F.A.I. Awards ( 4 pages) .....     | 0.10 "           |
| 6.              | " Instruction Manual                                      |                  |
|                 | (a) Part I, Instructor's Guide .....                      | 0.75 "           |
|                 | (b) Part II, Air Instruction Notes .....                  | 0.50 "           |
|                 | (c) Part III, Student's Notes .....                       | 1.00 "           |
|                 | (d) Air Cards (11 Plastic-Laminated) .....                | 3.00/set         |
| 7.              | S.A.C. Tephigram & Weather Briefing (Booklet) .....       | 0.25 (5/\$1)     |
| 8.              | " Weather Briefing Form N-052 (8½ x 11 sheet)...          | No charge        |
| 9.              | " Application for Official Observer (1 sheet) ..          | " "              |
| 10.             | " Blazer Crest (Navy Blue) .....                          | \$6.50 ea.       |
| 11.             | " Decal .....   | 0.25 "           |
| 12.             | " Tie (Navy Blue with Glider Design)                      | 2.75 "           |
| 13.             | " Cap (Red, Green or Blue with white crest)               | 3.00 "           |
| 14.             | " Glider Pilot Log Book                                   |                  |
|                 | (a) Single Copy .....                                     | 1.50 "           |
|                 | (b) In quantity of 25 or more .....                       | 1.25 "           |
| 15.             | F.A.I. Cloth Badges - 3" Dia. - "C" Badge .....           | 0.75 "           |
| 16.             | " " " - 3" Dia. - Silver Badge .....                      | 1.50 "           |
| 17.             | " " " - 3" Dia. - Gold Badge .....                        | 1.50 "           |

NOTES:

- 1) Item 2 available ONLY from: Mr. C.M. Yeates,  
33 Simcoe Place,  
HALIFAX, N.S.
  - 2) Item 5 available ALSO from C.M. Yeates.
  - 3) Items 6(a), (b) and (c) make up the S.A.C. Manual.
  - 4) Item 6(d) Air Cards sized 5" x 8".
  - 5) Make all cheques payable to S.A.C.
-

## B U I L D I N G   A   W I N C H

A short introduction to the necessities and possibilities of Tow Winch "design" by H.H. Herrdegen (Windsor Gliding Club).

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Any Club or other gliding organization planning to design and build a winch comes upon an amazing amount of questions, most of them having no clear cut answers. There are a few basics, which have to be met in order to have a safe, successful winch, but mostly there are no borders for the wanderings of the planner's imagination. Let me therefore alert such a planner to these basic requirements and confuse him with the countless varieties possible in arranging the basics into something resembling a winch.

First, let's classify the requirements a winch will have to meet:

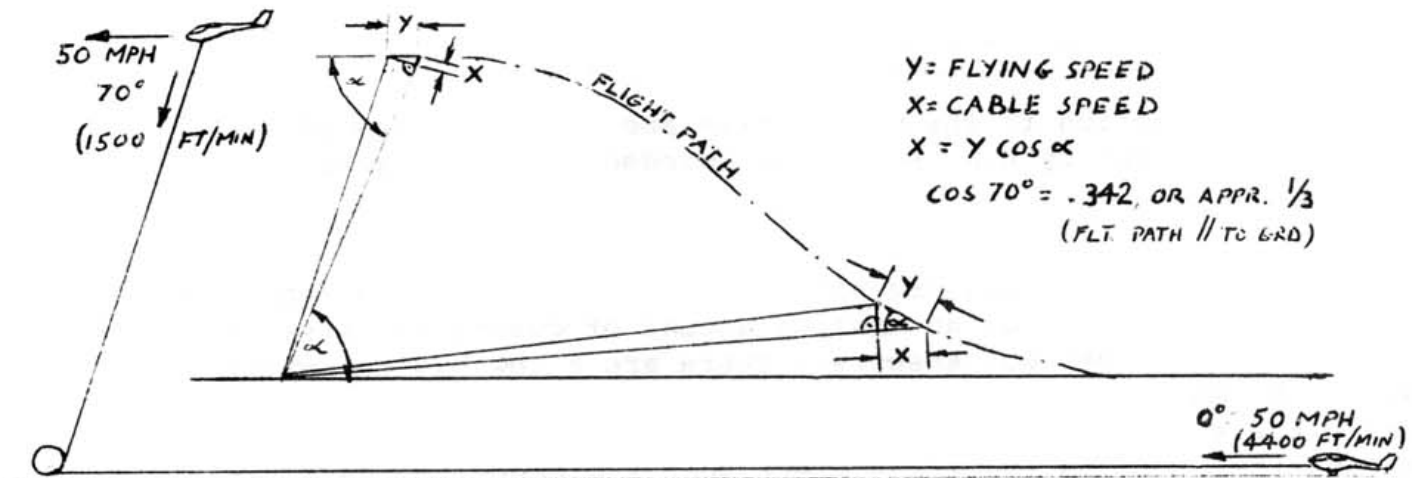
- 1) It has to provide a reasonable airspeed on tow to a properly flown sailplane or glider.
- 2) It has to provide this airspeed in various wind conditions, let's say from 5 MPH tailwind to 25 MPH headwind.
- 3) The lead in gear has to accept the cable from an area horizontal straight ahead to vertically overhead and  $90^{\circ}$  to either side, a full quarter of a sphere, and has to do this without snagging, either for tow or reeling in after release.
- 4) It has to have an absolute foolproof emergency cable cutter.

Furthermore, it should:

- 5) Provide the driver with visual indication of cable load, and
- 6) Be easily moved about, without much rigging or sacrificing ground stability.

Having established what we shall and should provide, let's look at these points a bit closer:

- 1) The first requirement seems to be something so basic, that it is not worth talking about, but it is actually the most critical parameter in any winch concept. A short look at the geometry of a winch tow will make this clear:



Neglecting wind effects with an aircraft tow speed of say 50 MPH, this will be the cable speed at lift off. The maximum reasonable cable angle at release being approx.  $70^\circ$ , the cable speed is then only about 1/3! This is a speed range over which contemporary gasoline engines are not too efficient. (And we will confine our thoughts to the use of the good old Otto cycle engine, and not dream about an electric or otherwise exotic powered winch.) This means that the engine has to operate in a range of approx. 1,200 to 4,500 rpm, with a good torque in the low end. Preferably not one of those highstrung hot rod engines, but a solid, flat torque, truck motor. 150 to 200 HP and 250 to 300 ft.lb. torque should swing everything but possibly a 2-32 upstairs.

Required engine torque is a function of maximum cable load, drum radius and total gear ratio. Cable load is not likely to be over 2,500 lb. (the weak link specified for the K7 for instance is 2,200 lb.) and remains constant, so that gear ratios and drum diameters have to be juggled around to achieve a sufficient torque and speed output at the drum. By no means an easy task if one has to consider available transmissions, rear axles and wheels as base for the drum.

The increase in effective drum diameter by the wound up cable is not to be neglected, and has to be considered in calculating torque and velocity values, especially when the drum is less than 18 inch in diameter. At the end of the tow, between 2,000 and 3,000 feet of cable will be on the drum, and 2,000 feet of .135" wire (our tow cable) will add 3 inches to a six inch wide, 16 inch diameter drum! And this affects the engine speed the wrong way, it slows it down even more!

No cumbersome and expensive levelwind mechanism is necessary, and the drum becomes self levelling, when the distance between the drum axis and the last guide on the lead in gear is 15 times or more the width of the drum. Sounds strange? The textile industry has known about this for ages!

2) To provide flexibility for various wind conditions, two, or even better three transmission speeds should be provided. An automatic is preferable, as it does not require the same level of driving skill that a standard transmission demands. On the standard transmission, no shifting takes place, but still a very fine coordination between clutch and throttle is required in order to make smooth take-offs, without jerks on the cable at the initial taking up of the slack and at the accelerating of the ship to lift off speed. On an automatic transmission, the shift mechanism has to be locked out, and towing takes place only in the selected gear. Up shifting during tow would be at best hard on the cable and the ship, but the momentary slack in the cable, which occurs even with the smoothest of transmissions, can be disastrous. The first shift will most likely take place with the ship just off the ground, or maybe 100 to 200 feet up, certainly not a place to court a cable break!

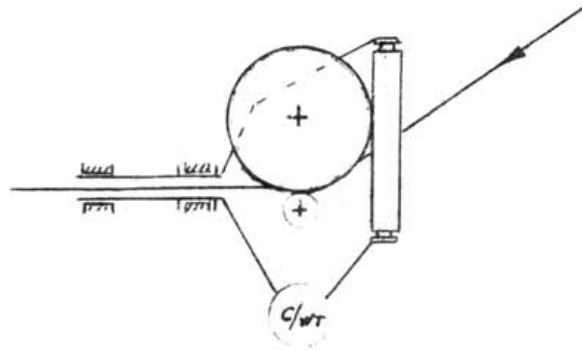
To control the horses and keep the drum with its great inertia under control also, a hand throttle plus a foot brake appear to be the best choice. As for the brake itself, beware of selecting something too light. A heavy band brake from a truck driveshaft will do a good job.

3) The only type of lead in gear of practical importance today seems to be the swiveling, single roll design. Level wind mechanisms are much too expensive to build and too cumbersome to maintain. The only requirement for the single roll type is the sufficient distance to width ratio (15:1), to bring the drums self leveling tendency into effect.

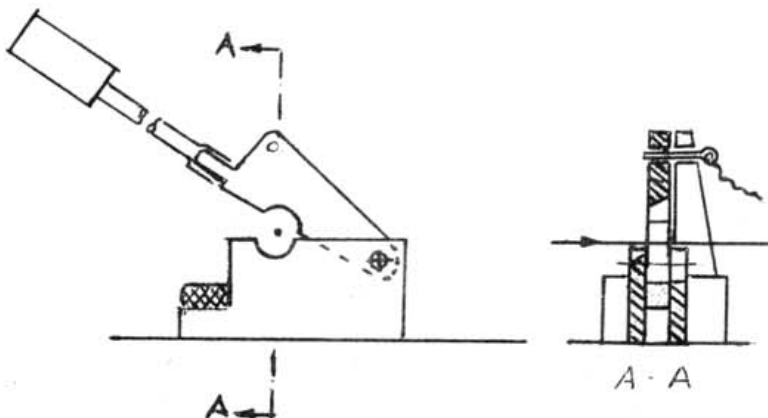
The cable to be used also has an influence on the design of the lead in gear and the further winch layout. Single strand wire (sometimes called "Improved plough steel wire"), 10 Ga, or .135" dia., which has proven itself very successful in our operation, requires a rather large pulley, at least 12" diameter. Otherwise it will work harden too fast and then break. On the drum, it is better in its self leveling characteristics than wire rope, and will work well even a bit below minimum distance. Wire rope on the other hand is insensitive to a small pulley, and 6" dia. is entirely adequate. But, if it is not the armored type (target tow cable), it tends to stick a bit together on the drum and therefore requires a longer distance to properly level wind itself. Splicing is easier and slightly quicker with wire rope, two Nicro-press sleeves will do the trick nicely, whereas the wire has to have a neat wirewrap either side of a nicro press or similar sleeve, 15 to 20 coils each, and in the same direction!



Swiveling the properly counterweighted lead in gear on a hollow shaft and leading the cable thru it, has generally worked out better than guiding the cable above the shaft. In the latter arrangement, the cable moves sideways in an arc, depending on the tilt of the lead in pulley, and this might necessitate an additional guide before the guillotine, depending on its design. Side rollers, 16 or 18" long conveyor rolls, are recommended in either case.

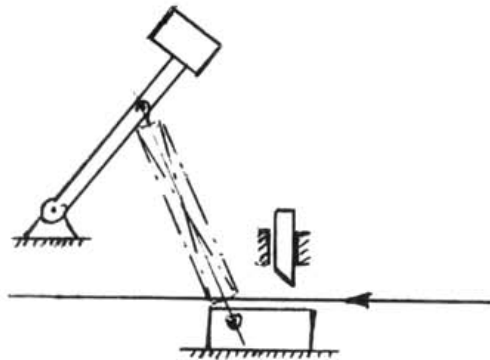


4) The most reliable guillotine I know of is a scissor action type, with the moving cutting blade pivoted between two fixed blades, the front one being the second cutting blade and having a half round cutout, opposite to the one in the moving blade. Thus, the cable is trapped in a  $1\frac{1}{2}$  to 2" circle, just before the cut. The rear blade is cleared in this area and acts only as a back up, to keep the two cutting edges in close contact. This is especially important when wire rope is used, to assure a clean, quick cut, without strands wedged between the blades. The removable weight for the cutting blade has to assure a clean cut of three strands of whatever cable is used. Jutting out from the winch at approx.  $45^\circ$  and painted in a bright colour, it serves as a visual indicator, that the guillotine is properly armed.



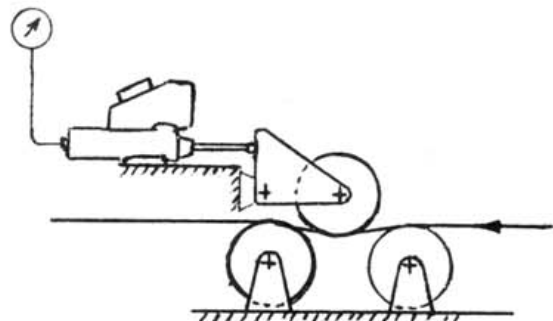
Release of the cutting blade can simply be affected by a shot pin arrangement, with an also brightly painted lever close to the driver.

Another possible method is to have a blade come straight down on a flat surface over which the cable is guided, "chopping it with an axe". This blade can be either weighted or springloaded and wide enough not to require any accurate cable guidance. This type requires less precision to make and less upkeep, but is not as positive as the scissor, unless made very heavy and therefore unwieldy. A refinement of this is a guided, chisel like blade with a hammer, possibly spring assisted, hinged or in a track, coming down on it. Closer cable guidance is again necessary for this type.

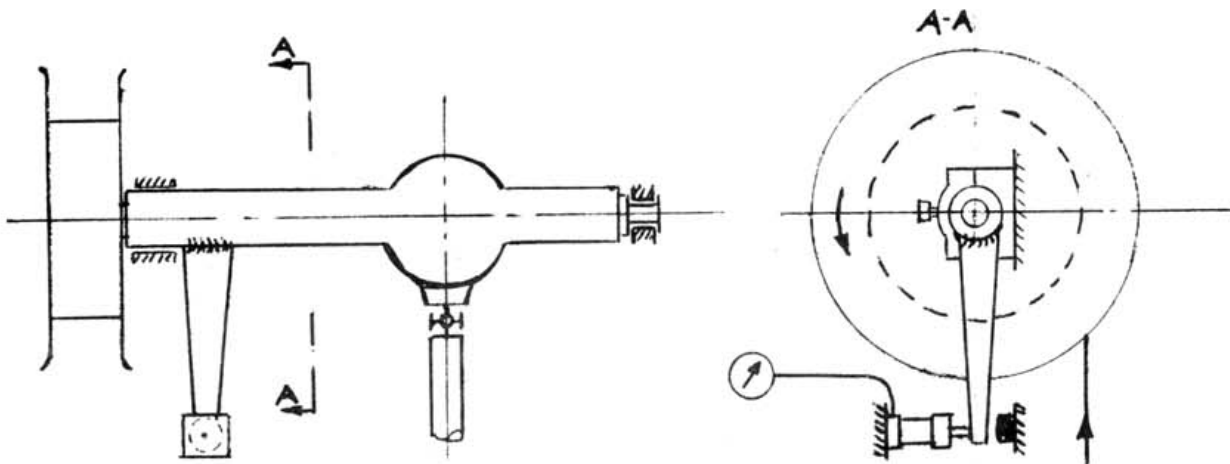


5) Not necessary, but a big help for the winch jockey, is a so-called "Tensiometer", an uncalibrated indicator of cable tension or drum torque, which is directly related to the load being put on the aircraft. It is, with a properly flown plane, also an indication of its airspeed, and helps to adjust to different sailplane types and also wind conditions, once a relative value is known for each ship.

The most common way to achieve this, is to lead the cable over two fixed pulleys, right after the guillotine, with another, freely up and down moving one on top and between them. This movement is transmitted to the piston rod of an automotive master brake cylinder, and its output measured with an adequate pressure gauge, mounted in view of the winch driver. This top pulley will, thru its weight, make a slight dip in the cable when it's slack. Any tension will tend to straighten out this dip, raising the pulley against the resistance of the brake cylinder, thereby giving a measurable indication of cable tension.



A more elegant method can be employed, when a rear axle is used in the winch layout. By supporting the rear axle housing on simple bearings, free to rotate a few degrees, a torque arm can be welded to this housing, and bearing against a hydraulic cylinder, it will give a reliable indication of the reaction torque, which in turn is directly related to the cable tension. Errors caused by inertia, drive shaft and angle gears are too small to be significant.



6) A wide variety of overall layouts is possible, and we might divide them into two basic groups: Self-propelled and Trailer winches.

Self propelled winches can either use the vehicle motor for towing, thru a power take-off or with a quick disconnect drive-shaft, or have a separate winch engine mounted in the back. This in turn could be an engine-transmission-drum in line arrangement, mounted crosswise behind the cab, operated from the passenger seat and with the lead in gear over the right front fender, or it could be sitting lengthwise on the truck bed with a separate operator seat. In order to achieve the distance required for self level wind, an outrigger for the lead in gear will be necessary in this layout, and possibly a reaction leg on the opposite side. 2,000 lb. pulling almost straight up can tilt a not too heavy vehicle. The introduction of a right angle drive could bring the lead in gear over the fender again, still further increasing the possible variation in arrangements.

As for trailer winches, two basic drive train arrangements come into consideration again: in line, either crosswise and using the length of the trailer for the required lead in gear distance, lengthwise with outriggers, or not in line, using a right angle drive between transmission and drum. This will be mostly a truck differential, but special winch gear boxes have been built and others are available commercially.

While the in line arrangement in both groups avoids the sometimes troublesome angle drive (warning: car differentials are seldom rugged enough!), it might be a bit wide in the crosswise configuration and get in conflict with legal road limits, or simply unhandy to tow.

The arrangement similar to a car layout, engine front, driver seat over the transmission and driveshaft, differential and drum in rear, with the lead in gear up front beside the engine, is very convenient to build. Two drums can be used, with proper locking and great care in cable retrieval. But no matter how careful, there is always the chance of a tangle and the savings in retrieving time seem hardly worth the potential trouble.

This layout has only one serious drawback, sharing it with the self propelled version, using the vehicle engine for towing: the radiator is in the wrong place! Since the wind is almost always from behind, the fan has to try and pull some air thru the radiator against this wind, and overheating can become a very realistic problem! Reversing the fan blades and/or designing some wind deflectors can cure this problem. Even on a crosswise design we built in Europe, this problem arose, and the metal cover door, meant to protect the radiator from transport damage, finally, opened to approx.  $45^{\circ}$ , doubled as a needed and very efficient wind scoop.

A trailer winch has to get off its wheels for towing, in order to assume a firmer stance. The least troublesome seems to be an arrangement in which two front legs (while the heavier hitch end is resting on the ground) are somehow lowered to, or almost to the ground, and then the hitch end is raised up (hopefully with a hydraulic jack built in!) until the load is off the wheels, and the winch is sitting solid on three legs. Some means to dig in a bit will have to be built into these legs, such as the flange of some structural steel profile, or the winch might be half way down the field on a dry day after a few tows! It could also sit on its frame after the wheels are either removed or swung up. Borrowing an idea from the race cars, the single wing nut wheel mount, or designing a quick release swing arm will, in conjunction with a jack, bring the winch down on a solid footing.

A self propelled winch of the "lead in gear up front" type will also benefit substantially from providing a firmer stance by jacking up its front end, so the springs cannot start swinging in harmonic motion with a cable oscillation from a porpoising glider! Also, the parking brake will not have to take the whole cable pull, or the need for wheel chocks is eliminated.

One thing is paramount for any of these possible layouts: quick and easy set up, not requiring a lot of muscle. The best ones can be set up by one guy in less than five minutes! You will appreciate this the day you are short handed on the field and have to change sides three times! Inevitably it will happen some time.

This almost infinite variety of winches that can, and have been built, seems most confusing. Which is the best way?

There is no answer to this question. Which layout is the best for a particular club or organisation depends partly on the type of operation and mostly on the resources a group has. Operations could range from a group of gypsies, wanting to fly from a different place every week, to an outfit with a winch set in concrete on either end of the field. Resources can mean a winch engineered down to detail drawings and built in a factory, to one borne out of brain-storm sketches on an old lunch bag and built with donations from the friendly neighbourhood scrap dealer! And may nobody say that the latter cannot be as successful as the former! Where do you fit in?

I myself have been involved in building four winches and have also flown on a factory built one. None of these bore the slightest similarity to the others, but all were successful and did their duty. The first one was a trailer, wheels removable, crosswise in line behind the seat. The second was a truck chassis, using a power take-off and with outrigger. The third was again self propelled, in line crosswise on an old milk truck, which became too heavy as a trailer when the self propelling quit and inspired No. 4, a "conventional" car layout, single drum trailer, with three legs. The commercial winch was something different again, in line, sitting on the ground, a wide drum with level wind gadget, and the seat between engine and drum over the transmission (and a lousy mechanical jack!)

Self propelled winches have the advantage of easier movement and set up with less fuss than trailer winches. They can tow a trailer and eliminate a retrieve vehicle by driving to the take off point, staking the cable down and backing down the field. A completely self contained flying circus!



But all this adds upkeep of steering, brake and other systems, the trailer winch does not have. But then, a trailer winch needs a retrieve vehicle, which has all those things and a second engine to boot! One can wind up with three engines also: Self propelled with separate tow train, plus retrieve car!

As I said at the beginning, it is confusing, but I hope to have succeeded. Whatever winch may finally be built, I hope this little contribution may have helped to make it successful and safe, to the advancement of our wonderful sport.

\*\*\*\*\*

RECOMMENDED PUBLICATIONS:

Dick Robinson of SOSA recently came across a copy of "Physiological Training" which he thinks would be of general interest to all pilots, and in particular to wave-soaring pilots. Some of the subjects covered are: hypoxia, hyperventilation, dysbarisms, problems of vision, vertigo, alcohol, and survival.

The 49 page booklet is printed by the Physiological Operations and Training Section, Civil Aeromedical Institute, F.A.A., Aeronautical Centre, P.O. Box 25082, Oklahoma City, Oklahoma 73125.

\*\*\*\*\*

Bob Gairns (MSC) advises that the Symposium on Technology and Science of Motorless Flight held at the M.I.T. was very good indeed. The Proceedings of the symposium may be obtained by sending U.S. \$5.00 to:

SYMPOSIUM MITSA,  
265 Massachusetts Avenue,  
Bldg. N52-395,  
CAMBRIDGE, Mass. 02139.

(For further details on the Symposium, see the September 1972 issue of SOARING magazine, page 11).

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The following paragraphs have been taken from club newsletters:

EDMONTON SOARING COUNCIL'S "TOWLINE" - Garnet Thomas.

Alberta Soaring Site:

There may soon be a Provincially Sponsored Alberta Soaring Site. The Alberta Soaring Council, particularly Klaus Stachow (Cu-Nim) is working to have the Cowley Field near Pincher Creek developed as a soaring site. The situation apparently looks promising!

If this works out, it could be the greatest boost to soaring in Alberta and Canada as a whole, that we have seen. I think that Klaus deserves a vote of thanks for all the work he has done and a promise of all the support we can give.

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WINNIPEG GLIDING CLUB'S "SOCKTALK": - Russ and Hazel Flint

Manitoba Aviation Council:

The Manitoba Aviation Council held its annual convention at the end of September with Jeff Tinkler of WGC in attendance. Nine resolutions, for recommendation to the Government, were passed, most of which were concerned with commercial aviation or with expanding the Winnipeg International A/P. However, one of the resolutions was: "To aid and encourage all students to gain a knowledge of aircraft and their impact on society"; I don't imagine any of us would quarrel with that.

HP-14:

A beautiful new silver bird has joined the flock at Pigeon Lake. The proud owners are Andy Urban, Dave Tustin, Brook Adams and Fred Sharp, and the HP was built in Winnipeg by Harold Townsend, with help from the new owners. It's an all-metal structure with a T-tail, and Harold has extended the wing span to approx. 60 ft. It weighs about 485 lbs, has an L/D of 41 at 55 mph, and a min. sink of 1.7 ft. per sec. at 46 mph. Fred estimated the cost of the ship at just under \$5,000, and they still have to build their trailer. Congratulations to our latest syndicate on acquiring such a fine glider.

-----

Vancouver ...

VANCOUVER S.A.'s "VANCOUVER SOARING SCENE" - Christine Timm

"Safety note:

Chuck Wilson, recently back from Melbourne where he visited the Aeronautical Institute, advises that he learned there that "FORM RUBBER CUSHIONS USED IN GLIDERS CAN BE EXTREMELY DANGEROUS". If one makes a heavy landing, the body will keep moving until reaching bottom, as foam cushions provide no impact resistance. Consequently damage to the spine can be experienced. It is suggested that all ships use a horse hair, or other type of impact cushion, beneath the foam to provide additional protection. (The fellow to whom Chuck was speaking at the Institute is a glider pilot). "

--

"DEDICATION"- submitted by Doug Mumford and taken from Richard Wolters' book: 'The Art and Technique of Soaring':

" To Olive, my 115 pound crew chief and first mate

... who swings a 100 pound wing,  
... who swabs a sailplane down in nothing flat,  
... who checks the ship over like a mother hen,  
... who stays calm when I get uptight before a cross-country flight,  
... who faithfully remembers everything, including  
shoving gum into my mouth the moment before take-off,  
... who pulls a 30 foot trailer over all kinds of countryside  
using road maps and aircraft charts to follow me,  
... who stays glued to the car's aircraft radio awaiting my  
every command,  
... who sweats me out if contact is lost,  
... who figures out my position anyway,  
... who can, and does, flash me a smile when we meet  
hours later in some farmer's field. "

--

"The old farmer stood watching while the young lady motorist got more hot and bothered every minute. Finally, the country sage stated: "Changing a tire, eh?". "No," was the annoyed reply, "I just jack up the car every few miles to give it a rest." Taken from 'Zanies Corner' B.C.Hotelman, Sept/72 issue. "

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LATE S.A.C. NEWS:

NEW CLUB - ONTARIO ZONE:

We are pleased to welcome the Provincial Motorgliding and Soaring Association as a member club of S.A.C. (For write-up and site location map of this Association, see pages 37 and 40 respectively).

★★

SITE LOCATION MAPS:

Most S.A.C. member clubs have by now sent in their site location maps. If your club is the exception, please do it now. The sketch should be sent to Walter Piercy (184 Churchill Crescent, Kingston, Ont. K7L 4N2). The masters are being kept for inclusion in 'Chem' le Cheminant's Historical Manual.

★★

MAIL?

Terry Tucker, our hard-working Membership Secretary, informs me that she is concerned about receiving complaints (daily) that some members are not receiving Free Flight. Terry has checked with the CASF Admin. Centre who do the mailing, and has been assured that 1,050 copies of Free Flight have been mailed out each time. (This is the number on Terry's subscription list and all changes of address sent to her have been incorporated). Terry also mentioned that no copies have been returned. If you hear that Free Flight is out and yet your copy hasn't arrived, please check with Terry to make sure that she has received your correct address.

★★

FREE FLIGHT:

The next issue of Free Flight will contain the Agenda for the 1973 meeting and the Minutes of the 1972 AGM. It is also hoped to publish 'Notices of Motion' for the 1973 meeting so that members unable to attend will have an opportunity to consider the Motions prior to the meeting. To make this possible, it will be necessary to mail the issue for printing by the end of January. Any comments or amendments to the 1972 Minutes (which were published in Free Flight Issue 3/72), should be sent to David Marsden with a copy to the Secretary (Mrs. Terry Tucker) prior to the meeting.

Since this issue of Free Flight will be out around the end of December, I would like to take this opportunity, on behalf of the S.A.C. Directors and Officers, to wish all members and the soaring fraternity throughout the World, a very Merry Christmas and Happy New Year.

Sylvia Webb - Editor.

★★

PROVINCIAL MOTORGLIDING AND SOARING ASSOCIATION

E. Balint

The above association is a non-profit organization duly incorporated with the Ontario authorities under letters patent No. 255085 and is operated by Mr. L. Haunsberger and myself. The objectives of this Association are defined along the same lines as most soaring clubs in Canada, with the exception that we intend to use all the possible advantages offered by motorgliders.

In addition to the above Association, Mr. Haunsberger and myself started a second venture which, although operated by the same people, is actually separate, both in purpose and in legal responsibility. This second undertaking is a direct result of the first. On account of our contacts with the factory during the purchasing negotiations of our RF-5-B Sperber, we have obtained the exclusive Canadian rights of representation and sales of all products of Sportavia Putzer GMBH & Co. of West Germany. The range of products presently available are as detailed on the attached advertisement. Applications for dealers' franchises will be considered. We have great confidence in Sportavia's products and definitely hope that this second undertaking will be a profit-making organization.

For a number of years now, we were strongly convinced that the future of soaring must be sought in the direction of self-launching, self retrieving development. The inconvenience of launching by car, winch or aerotow, the necessity of retrieve crew and trailer, is only too well known to everybody longingly looking out of his office window at the beautifully developing cloudstreets on Thursday 10:30 A.M. Sure you could leave work, they know you well and don't mind, but can you get a tow pilot and a retrieve crew? Not on your life.

Let us present the considerations which led to the forming of our Association and induced us to risk a considerable sum of money in the firm belief that our assumptions are correct. These considerations at the same time should be regarded as a policy statement of our Association and will function as broad guidelines for our operations, obviously reflecting our attitudes.

We believe that the motorglider is a significantly more versatile flying apparatus than either pure gliders or powered aircraft, therefore, it will appeal to a wider spectrum of aviation enthusiasts. Once its potential is recognized, its commercial success seems to be assured. We envision the application of motorgliders in the future along the following pattern:

TRAINING:

Motorgliders can be used Ab Initio for both power pilot and glider pilot instruction either in separate courses or in conjunction with



one another, thus providing a tool of instruction more suitable to produce pilots with greater understanding of and wider experience in, matters of aviation.

Requiring only the instructor and one student in order to constitute a class, motorglider training offers a flexibility for appointment and economy of operation which cannot be matched by conventional methods. The ratio of utilization will improve for this reason, resulting in further economy for clubs or profit for commercial operators.

Systematic training for cross country capability can be offered to beginner glider pilots at a fraction of cost presently possible.

The motorglider can be an invaluable tool and training facility for the serious competition glider pilot. Reducing the problems of launch and retrieve he will have more opportunity for training at a lower cost and under a greater variety of weather conditions. Properly instrumented, he may take a look-out pilot along and practice thermalling by instruments in preparation for cloud flying in contests organized by more fortunate countries than ours. By judicious application of partial power, he can simulate the performance of his competition sailplane in order to practice long final glides to the finishing line. Truly the possibilities for competition training are unlimited.

#### PLEASURE SOARING

Luftwanderung (airwandering) as the Germans aptly define the concept, is one of the most delightful aspects offered by motorgliders to the non competing soaring pilot. You can go to places of your choice with a motorglider, sampling this thermal or that, investigating bits of lift or any cloud that might produce lift.

#### EXPLORATION AND SITE EVALUATION

We are not aware if any wave flying was ever done in the Province of Ontario, but we have observed on various occasions, very distinctive lenticulars at three different locations within a hundred miles of the City of Toronto. Certainly they were not of the calibre of the Bishop wave, but they probably produced good lift up to 8 to 10,000 ft. Alas, neither towplane nor retrieving crew were available at the time.

Along the Canadian Rocky Mountain Range, there must be literally hundreds of excellent wave sites certainly rivalling and perhaps exceeding the ones found in the U.S.A. In order to find, explore and evaluate these sites by conventional sailplanes, decades of time, enormous amounts of work and money would be necessary. We cannot imagine a more suitable & inexpensive way than a motorglider to do this work in a fraction of time.

We formed the "Provincial Motorgliding and Soaring Association" with the aim of gaining experience in operating this type of craft with an open mind in assessing its potential and possible limitations. Our base of operations is a private strip less than 50 miles east of downtown Toronto near Lake Ontario (map in this issue of Free Flight). You are invited to visit us, have a good look at the machine, ask your questions and, if you feel inclined (& weather permitting) take an introductory flight. Whether you are for or against motorgliders, we welcome you to enjoy a unique experience.

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Engine: SPORTAVIA-Limbach SL1700E  
68 hp at 3,600 r.p.m.  
Max. diving speed ..... 140 m.p.h.  
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Stalling speed ..... 43 m.p.h.  
Rate of climb ..... 591.00 ft/m.  
Minimum sink (single) .... 2.5 ft/sec.  
Minimum sink (dual) ..... 3.1 ft/sec.  
L/D ..... 1:26

SF 25 C-FALKE

Robust side by side two seater  
with excellent soaring and  
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Very low operating cost,  
ideal for training.

Engine: SPORTAVIA-Limbach SL1700EA  
60 hp at 3,400 r.p.m.  
Max level speed ..... 112 m.p.h.  
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Stalling speed ..... 40 m.p.h.  
Climbing speed ..... 450.00 ft/m.  
Min. sinking speed about.. 3.3 ft/sec.  
L/D ..... about 1 in 23

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The outstanding single seater  
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It is truly a one man sail-  
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Perfect taxiing and ground  
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crew problems.

Engine: RECTIMO 4 AR 1200  
39 hp at 3,600 r.p.m.  
Mean wing loading ... 6.65 lbs/sq.ft.  
Cruising speed ..... 112 m.p.h.  
Stalling speed ..... 43.5 m.p.h.  
Climbing speed ..... 591.00 ft/m.  
Min. sink ..... 2.70/3.11 f/s.  
L/D ..... 29/26  
Operating range at  
engine cont. power ..... 440 st. m.

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L.A. HAUNSBERGER  
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PROVINCIAL MOTORGLIDING AND SOARING ASSOCIATION

FOR INFORMATION WRITE TO: E. BALINT  
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1.5 MILES

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HWY 401

SOARING ASSOCIATION OF CANADA

1972 ORGANIZATION

(\* Denotes - address above)

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T.R. Beasley\*  
A. Sunley, 4305 Wilcox Road, MISSISSAUGA, Ontario.  
G. Thomas, 10837-127 St., EDMONTON 40, Alta.  
G. Buhr, 725 Rousseau Ave., WINNIPEG, Man. R2C 1Y1.  
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D.B. Webb, 343 Dufferin Street, FORT ERIE, Ont.

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J. Tinkler, 364 Waverley St., WINNIPEG, Man. R3M 3L3.  
R.C. Gairns, 130 St. Francis Blvd., CHATEAUGUAY, P.Q.

TECHNICAL COMMITTEE

T.R. Beasley\*  
D.J. Marsden, 3920 Aspen Drive West, EDMONTON, Alta. T6J 2B3

TRANSLATION

T. Reisner, 719 Myrand Ave., No. 8, QUEBEC 10, P.Q.  
L. Cotte, 11655 Laforest, MONTREAL 356, P.Q.  
J.D. Agnew\*

List of Member Clubs1. QUEBEC & MARITIMES ZONE:

Air Cadet League (Quebec), 5726 Sherbrooke St. W., Box 340, NDG, Montreal 260, P.Q.  
Appalachian Soaring Club, Box 271, Sherbrooke, P.Q.  
Buckingham Gliding Club, 146A MacLaren Street, Buckingham, P.Q.  
Champlain Soaring Association, 11655 Laforest, Montreal 356, P.Q.  
Lahr Gliding Club, c/o Capt. B. Irwin, 1CAG H.Q., CFPO 5000, Belleville, Ont.  
Montreal Soaring Council, Box 1082, St. Laurent, Montreal 379, P.Q.  
New Brunswick Soaring Association, c/o F. Fowler, Box 2086, Sta. "C", St. John, N.B.  
Quebec Soaring Club, Box 9267, Quebec 10, P.Q.  
Soaring Club of Nova Scotia, Box 513, Truro, N.S.

2. ONTARIO ZONE:

Air Cadet League (Ontario), c/o R.E. Nevin, 1107 Avenue Road, Toronto 12, Ont.  
Air Sailing Club, Box 618, Station "K", Toronto, Ont.  
Algoma Soaring Club, Box 921, Sault Ste. Marie, Ont.  
Belleville Flying Club (1960), c/o J.E. Marker, Box 322, Belleville, Ont.  
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Central Ontario Soaring Association, Box 762, Peterborough, Ont.  
Chatham Air Cadet Gliding Club, 561 Lacroix Street, Chatham, Ont.  
Erin Soaring Society, Box 23, Erin, Ont.  
Gatineau Gliding Club, Box 883, Station "B", Ottawa, Ont. K1P 5S5.  
Lakehead Gliding Club, Box 161, Station "F", Thunder Bay, Ont.  
London Soaring Society, Box 773, Station "B", London, Ont.  
North Bay Gliding Association, Box 1612, Hornell Heights, Ont.  
Pioneer Soaring Inc., c/o D. Brown, 11 Norbury Crescent, Scarborough, Ont.  
\*Provincial Motorgliding and Soaring Association, R.R. No. 2, Blackstock, Ont.  
Rideau Gliding Club, c/o H. Janzen, 172 College Street, Kingston, Ont.  
SOSA Gliding Club, Box 654, Station "Q", Toronto 7, Ont.  
Toronto Soaring Club, Box 192, Station "C", Toronto 3, Ont.  
Windsor Gliding Club, c/o H. Preiss, 2058 St. Anne, Windsor 35, Ont.  
York Soaring Association, c/o W. Chmela, 10 Courtwood Place, Willowdale, Ont.

3. PRAIRIE ZONE:

Melville District Gliding & Soaring Club, Box 961, Melville, Sask.  
Red River Soaring Association, Box 1074, Winnipeg, Man.  
Regina Gliding & Soaring Club, Box 406, Regina, Sask.  
Winnipeg Gliding Club, Box 1255, Winnipeg, Man., R3C 2Y4.

4. ALBERTA ZONE:

Cold Lake Soaring Club, Box 1714, Medley, Alta.  
Cu-Nim Gliding Club, Box 5922, Station "A", Calgary, Alta.  
Edmonton Soaring Club, Box 293, Edmonton, Alta.  
Red Deer Soaring Association, Box 963, Red Deer, Alta.  
Yukon Soaring Association, 508 Hanson Street, Whitehorse, Yukon Territory.

5. PACIFIC ZONE:

Alberni Valley Soaring Association, c/o D. Pearson, R.R. No. 3, Port Alberni, B.C.  
Comox Gliding Club, c/o Cpl. D. Webber, CFB Comox, Lazo, B.C.  
Kamloops Soaring Club, c/o D. Lurkins, 627 Alberni Street, Kamloops, B.C.  
Vancouver Soaring Association, 1461 Terrace Street, North Vancouver, B.C.  
Van Isle Gliding Association, c/o R.J. Hansen, R.R. No. 2, Courtney, B.C.





SOARING ASSOCIATION OF CANADA

Club and Flying Statistics - 1972

CLUB: \_\_\_\_\_

1. Number of Towplanes \_\_\_\_\_
2. Number of Winches \_\_\_\_\_
3. Number of Gliders:      Active      Inactive      Being Built  
    Club Gliders      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
    Private Gliders      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_
4. Glider Flights and Cross-Country Miles:  
                                 Flights      Hours      Cross-Country Miles  
    Club Equipment      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_  
    Private Equipment      \_\_\_\_\_      \_\_\_\_\_      \_\_\_\_\_
5. Launch Method (✓)  
    Aerotow      \_\_\_\_\_  
    Winch      \_\_\_\_\_  
    Auto      \_\_\_\_\_
6. Number of Students receiving MOT Glider Pilot Licence \_\_\_\_\_
7. Number of "A" Badges issued \_\_\_\_\_
8. Number of "B" Badges issued \_\_\_\_\_
9. Number of "C" Badges issued \_\_\_\_\_

Please fill out and return this sheet as soon as possible to:

R.C. Gairns,  
130 St. Francis Blvd.,  
CHATEAUGUAY, P.Q.

F O R   S A L E

1-23G        -        Complete with instruments, radios, oxygen,  
parachute. Excellent condition, new paint.  
Schweizer trailer.  
Contact:   Maurice A. Swertz, 452 Woodlawn Crescent,  
WEYBURN, Sask.   Phone: 306-842-4558.

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WINCH        -        German factory built winch with level winder.  
4,000 feet of new cable (the best made) mounted  
on a Buick with Dynaflo transmission.  
For more information contact:  
  
                 John Anthoine,  
                 290 Queen St. East,  
                 SAULT STE. MARIE, Ont.  
Phone:        705-253-9703 or 705-253-5736 (Home).

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AUSTRIA SH   -        In immaculate condition. Canadian registered.  
Located near York, Pennsylvania. Complete with  
trailer. To settle estate of the late Wolf Mix.  
Write to:   T.R. Beasley, 173 Leslie, Roxboro 970,  
P.Q.

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SKYLARK 2        MUST SELL, or suffer a diet treatment.  
Basic instruments, chute, new fabric.  
Contact:   Erwin Reiche,  
                 273 Cardinal Leger Blvd.,  
                 ILE PERROT, P.Q.  
Phone:        514-453-6884 (Home).

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SHK-1        -        In top condition. Instruments and custom trailer.  
Price \$6,200.00. Contact:   Henri Chabot, 565  
Poirier St., Ste-Dorothee, P.Q., or Kurt Kovacs,  
285 Samson Place, No. 3, Chomedey, P.Q.

All advertising in 'Free Flight' of personal equipment (your own glider, instruments, parachute, oxygen equipment, radio, etc.) is FREE as a service to S.A.C. members. For non-S.A.C. members and for commercial advertising (aviation supplies & aircraft sales by dealers) a charge of \$8.00 is made for a full page. (Ads of ½-page at \$4.00 and ¼-page at \$2.00 are acceptable). Cheques for the latter should accompany the advertisement and be made payable to S.A.C.

25TH CANADIAN NATIONAL SOARING CHAMPIONSHIPS  
WINNIPEG, MANITOBA.

As noted in SOARING magazine and FREE FLIGHT, the dates of the above contest have been tentatively set for June 4-15, 1973. This date was prompted by a suggestion to the organizers from Dave Marsden, that they hold the contest at this time in order to make it more 'contest oriented'. However, Julien Audette recently pointed out to the organizers that he, for one, couldn't attend, since he liked to take his family along and his daughter would still be in school at that time. (Schools close the last week of June in most Provinces).

Apart from the school closing problem, quite a few competition pilots, and indeed crews, might find it difficult to get time off from their jobs so early in the summer.

It is felt that, although it is nice to have the best weather for a contest, this isn't the prime requisite, since the main object is to make sure that all the pilots fly against each other under differing weather conditions, whatever they are. Records can be set any time. By having the contest in Winnipeg (roughly halfway across) it was thought that this would give equal travelling distance to pilots from, say, Halifax and Vancouver. It should be noted, and appreciated, that the Winnipeg members spontaneously consented to do the organizing and, to make this all worth while, it is necessary to get the maximum number of competition pilots to attend. It would greatly assist the organizers if prospective competitors would spend two minutes or so, filling in the following questionnaire, to ensure that the date chosen meets with the majority preference. Ed.

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25TH CANADIAN NATIONAL SOARING CHAMPIONSHIPS, WINNIPEG, MANITOBA.

NAME: ..... CLUB: .....

1. The date set of June 4-15, 1973, is acceptable: ☐ Yes ☐ No
2. I would prefer the alternate date of June 25 -  
July 6, 1973, now suggested by the Organizers: ☐ Yes ☐ No
3. If it is possible to organize the contest at a date other than the  
dates above, I would prefer:

..... OR .....

(Please return this questionnaire to Glen Buhr, 725 Rousseau Ave., W.,  
WINNIPEG, Man. R2C 1Y1. Mail it to arrive NOT LATER THAN JANUARY 31, '73).