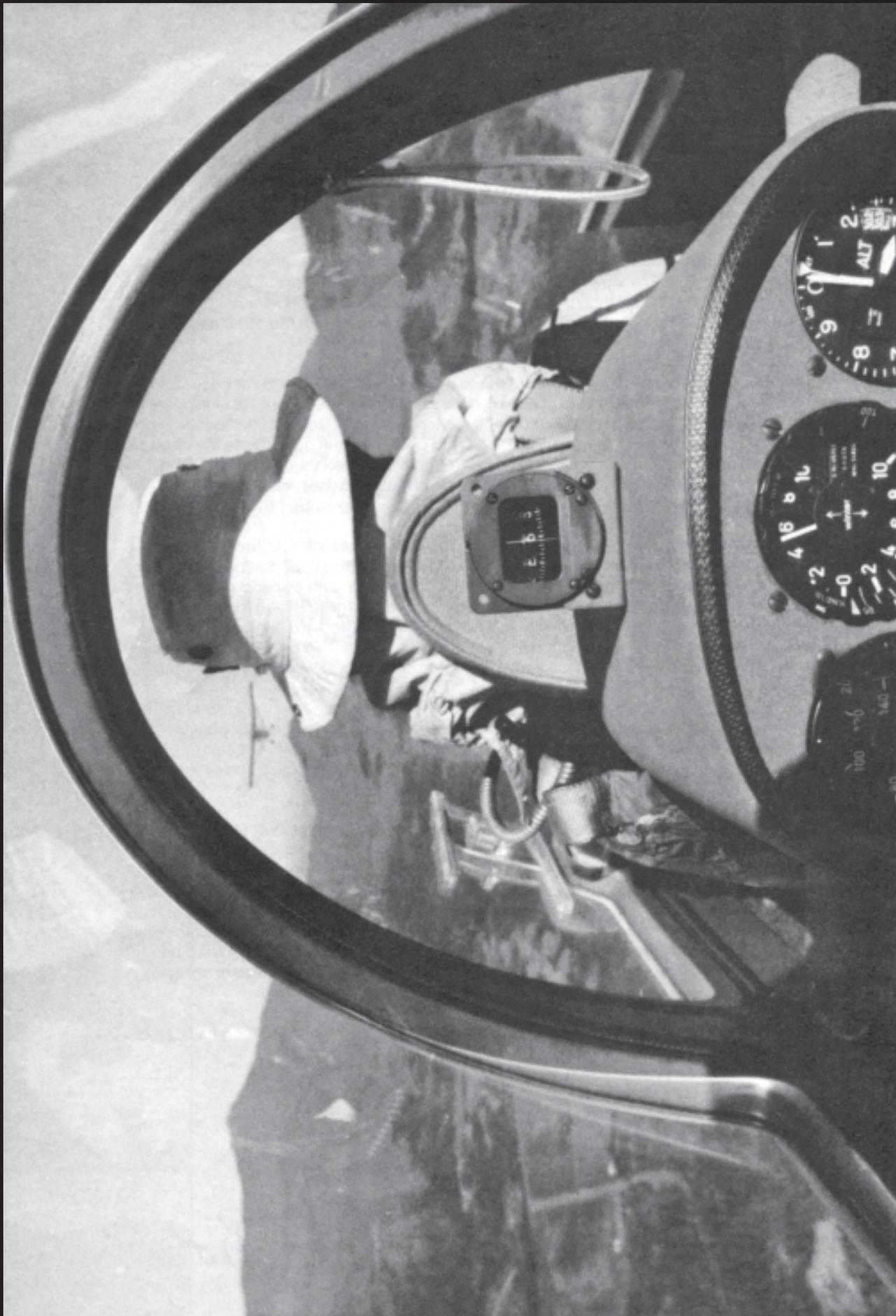


free flight • vol libre

2/86
Mar-Apr



Musings

It is too soon to be able to report and discuss the AGM, the new insurance policy and the support that we may receive from Fitness and Amateur Sport. There is one issue of real interest and some surprise. I refer to the granting by the International Olympic Committee of associate status to the FAI and, subsequently the designation of Soaring, Parachuting and Hang Gliding as "Olympic Sports". I have no idea what the long term impact of this event will be — it certainly will make life more interesting. Just how I'm not sure.

It has come to my attention recently that two clubs, one in the east, the other in the west, are beginning a program that, in my view, is long overdue. It is a planned, well thought-out fleet modernization. While the basic starting rationale differs, the results will be, I believe, remarkably similar. They will move their training programs and fleet progression from the 1950s to the 1980s — maybe even the 1990s.

This is a program that I believe too many clubs fear to address. It is too easy to rationalize, then justify "the old way". If that were valid, we should still be using primaries for our "ab-initio" trainers. Most of the rest of the world uses at least Blaniks. Many use the Grob G103, Puchacz, or the ASK-21 (all type approved in Canada). The clubs and countries that have made the change recognize that modern single-seat ships need modern trainers to feed them. Similarly, they implicitly recognize that their new students are naturally attracted to the modern ships and are often dismayed to find that "the old looking crock" is to be their training home.

It's an old, but I think valid theme of mine that there are too many alternate attractions / distractions / opportunities for those who have the potential to be a soaring pilot. Sailboarding, sailing, parachuting, ultralights, and hang gliding also offer challenge, glamour and excitement. In my view, the cost of sport is not a major factor for many. You disagree? Then look at the cost of a good sailboard and the clothes to go with it. And the entrance and sustaining fees for a yacht club to use as a base for instruction, competition and social activities. Continue to look at the cost of participating in the other activities I have named and you will see a similar picture.

We have to decide what our source market for members is. Is it those whose sole goal is the least expensive flying possible? Or is it those who will fly for the delight, thrill, excitement, glamour and, ultimately, the skill of it all? I submit to you that our historic source has been the first category; to survive and grow we need to tap the second.

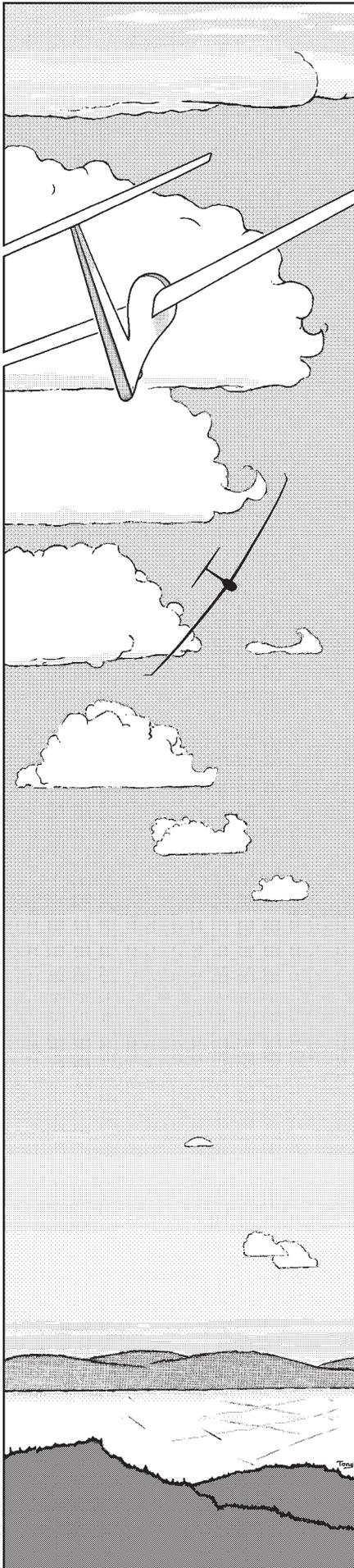
I believe that it is essential that we modernize. Growth and improved safety will follow.

At the last AGM, I addressed the need to re-examine the goals and direction of SAC. I gave the Directors some tasks on which to report. Time and circumstances have kept us from doing as much as we should; and in a way, the exchange of essays between Dixon More and myself is one result. More important, prior to the last Director's meeting in Ottawa, Howard Goldberg of RCFCA led us through a planning session. Ian Oldaker and Karl Doetsch also joined us. Unfortunately we had too little time to do all we could or should, but the process bears repeating, and I'll comment more later.

My goals for 1986 are 100 hours and the 500k diamond. And as much competition as I can afford in time and money. What about you?

Fly safely, well and often
starve the crocodiles and, above all,
enjoy the journey.





free flight • vol libre

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2/86 Mar-Apr

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

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Cover

Dugald Stewart gives us a beginner's view of wave flying on page 4. Here, he and back seat pilot Wolfgang Thiele are on tow from Lake Placid, New York back to Gatineau in the Rideau Valley Soaring Grob Twin, and approaching the Falls Brook/Stills Brook gap NW of Lake Placid.

A FRIEND OF JACK

Dear Tony,

The grapevine, being as efficient as it is in these matters, transported the news of Jack Davies' horrible accident shortly after its occurrence. Naturally, no one likes to hear of this, especially a fatal one. Of course the news bothered me; however, I must admit that I gave the matter little further thought. We've had a rather bad year as far as gliding accidents go, and in just Ontario alone it seemed like one accident a week for awhile last summer. Here at York we've been lucky and have been counting our blessings, believe me.

I guess what I'm trying to say is that when I first heard of the the wave camp accident, my mind was sort of calloused from hearing of so many already. The majority of them seemed to be the usual spate of poor circuit accidents — you know — the overshoots and undershoots, tree-trimming, and that sort of thing. All quite easily avoidable, and yet ...?

When I read the "In Memoriam" in the 6/85 **free flight**, I began thinking about this particular accident all over again This is one which stands out. It is not one of those, "Tsk, tsk, lousy circuits are bound to get 'em every time"; or the "That's what you get for turning around off a low cable break"; or flying while ill and dehydrated, or whatever. This was the sort of event which I can see happening to **any** pilot who is a member of the human race. It could have happened to you or I, or any other pilot which you or I have known, respected, and loved, no matter how cautious they are.

In the "In Memoriam" you mention Jack as having been "an enthusiastic pilot and instructor whose smile and good nature was characteristic". What a coincidence — every single one of my good friends which I've found through this wonderful sport share exactly the same traits! So, although I cannot claim to have known Jack, I just know that I would have been his friend had we met.

When one looks at his remarkably positive character again, it becomes painfully obvious that one of these proved to be his downfall. Jack did not die because he had a characteristic smile, or because he was good-natured, but because he was an enthusiastic pilot. Again Tony, that sounds like you and I, or any of my friends. It could have happened to any of us ... upon hearing that the wave was active again, he stopped de-rigging, finished re-rigging and enthusiastically took off for the wave. No wingpin safety clips, and we've lost a friend.

Any pilot who claims that this could not have happened to them is a fool.

I think that all of us qualify as being enthusiastic pilots or we would not continue in the sport, therefore we are all prime candidates for falling victim to our own enthusiasm.

You wrote that friends of Jack may wish to remember him by a donation to the Jack Davies Memorial Fund. Again, I've not met the man, but since I too am an enthusiastic pilot, I will be so bold as to consider myself a "Friend of Jack", and so send along my small contribution.

The joys of the sport are manifold, and the lure of the sky overwhelming to any enthusiastic pilot. We will continue to fly for the sport, we will continue to be human, we will continue to be enthusiastic. Unfortunately, all this means is that his death was, in a sense unavoidable.

Jack was as close to being an innocent victim of the sport that you will ever find.

Seth Schlifer



The SOARING ASSOCIATION OF CANADA

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

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

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vol libre est le journal officiel de l'ASSOCIATION.

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5

OPINIONS

STEEP TURNS EASY

Bob Carlson's musings in 1/86 **free flight** reminded me that many pilots are not aware that there is an easy method of speed control in steep turns.

Difficulties arise for banks beyond 45 degrees because the horizontal (turn making) component of lift is greater than the vertical (lift) component. When the nose starts to drop, pulling back on the stick increases the total lift force as usual. Unfortunately, the horizontal component increases more than the vertical, thus tightening the turn.

Beyond 45 degrees, varying bank rather than pitch is more effective at controlling nose attitude. Decreasing the bank slightly reduces the horizontal component while increasing the vertical. With this method sustained steep turns become easy even if the entry speed was not steady. The standard spiral dive recovery is merely an extreme application of this technique.

Ray St. Laurent
RVSS

MOUNT WASHINGTON NEWS

Allan MacNicol of Boston was the originator of the modern Mt Washington wave camps twenty years ago, and for the first six or seven was the manager, providing towplanes and towpilots and running a safe and disciplined operation.

The first camps started in 1965 or 1966, and soon became a regular feature on the soaring calendar during the last two weeks of October. From the start, Roger Merrill, a Boston businessman, allowed pilots to stay at the "Schussverein", a ski hut of which he was a member. All one needed was a sleeping bag, as the first floor rooms were all bedrooms. There were regular attendees from Detroit, the New England states and Canadians from Windsor, Toronto, Peterborough, Montreal, and Quebec City.

For the past couple of years the North Conway airport has been for sale and 1985 was likely to be the last year of operation there, with no other suitable airfield close to the Mt. Washington wave. It appears that the sale has now gone through.

As you know, one is lucky to attend wave camps just at the time a wave is working. The 1985 camp was fortunate to have two good wave days, one which gave heights of 29,000 feet, and a second when over 33,000 feet was reached. The airfield elevation is 450 feet, so with 2 or 3000 foot tows, the gain of height can be appreciable.

On the best day on 25 October, US pilot Mike Stevenson took off in his DG-400 motorglider, dived to 700 feet to the local hill and from there worked his way by hill lift, thermals and then wave up to the main mountain some 18 miles away. He achieved a motorglider world record gain of 32,595 feet (9935m) after reaching an absolute altitude of 33,733 feet.

Sadly, we lost our host Roger Merrill, who normally did not fly on such days of extremely strong winds; he was killed in an off-field landing accident. Those of us, many of whom were SAC members, and who enjoyed the happy evenings around the fire at the Schussverein, relaxed after magnificent farm-style meals cooked by local ladies, will always be grateful to Roger and his wife Jane for making us a part of their family.

Bob Gairns

CARLSON VS MORE COMMENTS

With reference to Dixon More's comments in the 1/86 issue of **free flight**, I feel that the Canadian gliding movement is healthier for an open discussion. It is a measure of individual member's concern when they speak up, and I commend Dixon for his concern about SAC affairs and for his courage in stating these concerns for the benefit of the general membership.

A concern of mine is the lifetime membership fee, which I have tried to show is a rip-off against the membership. Another item is the raiding of the Pioneer fund which was set up to provide general income from half the interest generated. However, if the capital is removed, there is no income. To me this is a violation of the principle for which the fund was established, and is a breach of the trust by the SAC Directors.

Much of the good work which Bob Carlson cites in his reply to Dixon's letter – that of the Flight Training and Safety committee, Technical committee, Tony Burton as **free flight** editor, Boris on FAI awards, plus other valuable committees – is work carried out by volunteers, not by the National Office. The SAC office staff appear to have been asked to take on too many small items that could and have been performed in the past by willing volunteers. The cost of SAC membership can best be reviewed by examining the budget. One item in the 1985 budget was the \$16,000 allocated for travel and accommodation. I suggest that this could be significantly reduced by cutting out the three SAC Directors' meetings held across the country during the year. I believe as much work could be accomplished by mail.

Bob Gairns
MSC

FALL WAVE FLYING: A Neophyte's View

Dugald Stewart
RVSS

"Mountain wave" — these words no longer inhabit the weather books, being illustrative of esoteric meteorological conditions. They now appear in my log book associated with memories of challenging flying, positive growth as a pilot, and an enjoyable entry into a larger and welcoming soaring community. For this fledgling solo pilot from the Rideau Valley Soaring School at Kars, participation in the expedition to Sugarbush, Vermont with the Gatineau Gliding Club at Pendleton and RVSS' own weekend trips to Lake Placid, New York in October, 1985, brought rewards beyond those associated with increasingly active club involvement.

Sugarbush. The name had already emerged from the fog of not-so-idle conversations on the field, associating itself variously with a Fauvel "Flying Wing" in the trees, a twisted Blanik on the runway, and an airstrip hidden by a tree'd knoll. Only much later did these conversations seem to lead to this year's trip. Beth and Jim McCollum and Glenn Lockhard are all persuasive and positive that it was not too early for me to venture out, and that every opportunity to fly away from home base should be taken. But club flying continued at a heady pace, be it conversion to that ancient delight, the 1-26, or keeping mid-week instructional flying organized amid dwindling daylight. On September 22, I visited Pendleton and sample two "new" gliders, the Blanik and ASK-13. My favourite, the K-13, would be at Sugarbush. The introduction to a new type proceeds better than I had expected, given my much earlier, partially unsuccessful, move from a 2-33 into a Grob G-103 Twin II. But many flights had elapsed since then and I was now at home in the 1-26.

The fall flying provided an opportunity to remain active within the club while also sampling a broader spectrum of the eastern Ontario soaring community. At the stage where the club expedition to Lake Placid, New York from Kars was by no means assured, the Sugarbush outing seemed very attractive. GGC's Debbie Holt had the organizational details under control making the venture irresistible. I arranged a week off to fly at Lake Placid and then to trailer the 1-26A (CF-ZDO) to Sugarbush. Although I am cleared to fly the 1-26 at Pendleton, I decide that I will neither reject nor insist upon flying it in the mountains. Unwittingly, this determination to sample the fall wave season added me to the nascent "Placid group" forming at Kars. This was fine, since I felt strongly that the club should venture out **as a club**. The potential for post-solo dullness, identified during an hour-and-a-quarter flight in a 1-26D on Oct 3, would be delayed for the balance of the season.

As a first season pilot, these trips presented an array of aeronautical "firsts": first trailering of a sailplane, first flights in wave, rotor and ridge lift, first cross-country and first international aerotow. Some of these experiences were also "firsts" for some of the well-seasoned flyers. For me, the differences between the two locations preserved each site's unique identity. Lake Placid was a P2 experience for me because the club had no single-seater likely to make it back to the airport from the Sentinel ridge. Sugarbush offered P1. The thought of solo flying in the mountains was unsettling, but the P2 time at Lake Placid preceding the flying in Vermont was an unconscious advantage. I was not alone experiencing these unsettled feelings, but I would be the only low time pilot to overcome them.

A frenetic season had left me externally qualified in Gatineau's eyes: licence and off-field landings. At Kars, I had been one of three students to practise off-field landings at the Kemptville farm strip, eight miles distant, but I had displayed the poorest performance. Later, on the licence test flight, I was obliged to land out at Dr. Dale's strip near North Gower, only five miles away. Although handled with the use of a "bold" (an observer's description) sideslip over the wires that had shortened the towplane's rope moments earlier, I still felt uneasy about landouts.

Lake Placid. On the afternoon of October 12, a characteristic whistle is heard

minutes before any of us in the trees at the airport can see the Grob. The tug's earlier landing had predicted the event. The Montreal Soaring Council was already on the field in strength, complete with one of their L-19's, C-FERD. The list for the Grob starts to look like a petition to abolish taxes. An active flightline and field operation fills the air with sailplanes. Although the wave is not working, there is solid lift over the Heart Lake knoll that attracts every glider. Another first, gaggle thermalling, and an hour and three-quarters of lookout is enough to develop a very stiff neck. The flight ends with a high turn onto final. It would take at least another flight or two to develop a resistance to turning final early, triggered not by the circuit angles, but by trees rising towards you on base. Other, more experienced, pilots do likewise, reducing my embarrassment.

Conditions preclude flying Sunday so we go for a drive to check features that stood out near Heart Lake. With surprise I find that a field that looked good from altitude is strewn with hundreds of boulders, some several tons in size. Across the road, the field is better — it could be a gliderport. A valuable exercise, this. On Monday the Grob is up and down all day, never connecting, and we head home.

Sugarbush. Wednesday morning, October 16. Pendleton looks different at 0445. A Pik-20D, K-13 and 1-26A set out for Sugarbush. After an uneventful trip, we rig, and join a consistently growing Canadian popu-



Wolfgang Thiele

Dugald pilots the Grob 103 over Lake Placid. Whiteface Mountain on the right produces wave in a NW wind (aircraft is oriented approximately north).

lation. For a while people are busy with check rides in the K-13. I get clearance for the 1-26, ZDO, sitting forlornly on the field, beckoning the way only a 1-26 can, insists on a resolution. We go.

The L-19 rockets up seemingly unaffected by the slight load. The vario winds past 10 knots and stays there — amazing. Soon the mildly turbulent air turns greasy and calm; a waggle, and I am free. So this is wave — an effortless two to three-and-a-half knots up. The silence adds to the eerie feeling.

Pilot error. Benign mistakes are committed by this inexperienced glider pilot. My amazement at this flying leads to exploration of zones of lift, oblivious of some other important factors. The landscape is vaguely unfamiliar but the check flight had not been as high (6100 feet) nor had there been signs of wind drift similar to those I now noticed. East, across the valley, is a field superficially similar to the airport. I head across. Rotor — a thousand feet vanishes. It is clearly not the airport, just a hilly field bisected by a road. Another error. I become profoundly nervous — not irrational or panicked — just scared. Nothing is familiar. The drift was north so I head south. Slowly I realize that the knoll way down the valley must mark the field. Remembering a conversation about landmarks with Glenn Lockhard more clearly than any vision from the check ride, my decision is confirmed.

Although later I determine that I had been 10 miles downwind in the 1-26 with less than 3500 feet of usable altitude, my destination now simply appears to be far away and high on the canopy. I rule out a trip back through the rotor to seek the wave. But the vario perks up half a knot — one, two — it was like finding the house thermal. Pick a field and nurse the lift. I tiptoe back down the valley, changing land-out spots as necessary. Half way back and the landing options are in a serious decline. But the angle relative to the knoll is much better. With enough height for a tight circuit, I'm back, feeling sheepish, an hour more experienced and eons wiser.

The next pilot then takes the 1-26 to a Gold altitude gain and others collect Golds and a Diamond. I head off again for a couple of hours and climb to a cloud deck, hovering for a safe period with opened spoilers at 11,600 feet. The Vermont weather has been cooperating, producing a wave and memorable flying. (I have yet to see 10 knots of sink in the circuit at Kars!) Although Saturday looks bad, the rain ends and a window opens in the afternoon. Gliders stack up on the flight line like cordwood. This is my first time sitting on a flight line nine deep for half an hour waiting for a tow. Even the Waco biplane is fired up to clear the backlog. It had been fun. Much time was spent exploring the oft turbulent lift offered by the rotor.

Sunday — the final day. I am on the field very early, using the rising sun to melt the night's frost load. Other eager pilots, Beth McCollum and Bruce Gormley, appear to do the same. Moisture left by the departing slush is towelled off. As the field fills up, the wind freshens. A flight line forms. I strap in. The canopy won't stay clear. Glenn passes me some paper towel carelessly omitted

from my basic kit, gives the spoilers another careful wipe and warns about freezing, and I remember him making me do circuits and landings without spoilers. More elements of a difficult, demanding and often frustrating season achieve a real, as opposed to a merely clear, rationale. The flying is rough. I only manage 38 minutes mostly in rotor, despite weak wave being exploited by others. It's cold in spite of thorough preparation, but the trusty 1-26 returns for de-rigging without frozen controls, and is loaded on the open trailer.

Our Sugarbush '85 is over. Through the organizational efforts of many it was a resounding success. Accommodation in the Middle Earth condominiums was comfortable and social as well as aeronautical expectations being met. Gold altitude gains had been achieved by Ted Froehlich, Stewart Baillie, Peter Sully, Bob Mercer, Dave Mercer, and Gary Paradis.

Lake Placid. Flying here had not yet ended. The Champion and Grob greeted eager pilots on October 26 and 27. The wave was working the first day and significant altitudes were gained by some. I sample my first New York wave in company with Peter Whitworth, our chief tow pilot. His first North American wave includes firsts for me also. Lenticular clouds are clearly not transparent and produce frost at 9300 ft. Hawkesbury members appear in number on Saturday. All fly, many in the Grob. The wind freshens on Sunday and the field is largely depopulated. We make eight flights in very difficult wind conditions. A Pik-20B is cut loose from a dangerously high tow position from which it cannot recover and the rope is lost. Flying ends, but not before I had sampled ridge lift and one of my most challenging tows in company with Bryce Gormley. I am starting to enjoy the Grob, something that was unexpected this season. Equipment is tied down awaiting either another weekend's flying or a fine weather retrieve. I resolve to be available.

The Grob had arrived at Kars earlier this year without the club adding a suitable trailer to its equipment. Although this limited its cross-country training potential somewhat, it clearly dictated the mode of transport to Lake Placid. Planning for the aerotow proceeded largely as it would have for any trans-border VFR flight for the tow plane alone. Additional considerations included the width of runways at alternated airports (the Grob's span is 17.5 m) and the maintenance of a ground track within final glide distance of the nearest alternate. Customs clearance must be obtained at Massena, NY departing and at either Cornwall/Summerstown or Ottawa International returning, depending on the day. New ropes are made, including one of double length (320 feet) for the tow there and back.

The aerotow provided five Kars pilots with additional experience of cross-country aerotow over widely changing terrain and navigation. It provided the less-experienced glider pilots with welcome additional time in the Grob. The retrieve awaits the weather. October 31 looks good — a blue day. A team of four assembles: Peter Whitworth, Wolfgang Thiele, Robert Snelt and myself. At Lake Placid, the Grob needs defrosting

so we review the flight plan over lunch. The previous unsuccessful attempt to link the ships by radio dictated that the return be NORDO. With no wind, lift-off was late and climb-out low. Several circles are needed over the town to gain enough height to clear the Falls Brook/Still Brook gap. Turbulence is very mild but waves still appear in the long tow rope. We pass through the gap at about the same elevation as Whiteface's peak to the south, and Malone creeps into view. The sky is dead and the tow easy. The flying is all mine while Wolfgang navigates and photographs.

The St. Lawrence provides a silvery boundary to the inversion layer to its north. I am late picking up Summerstown airport and release with about 5000 feet on the clock. The sock isn't visible, but power traffic confirms the wind direction suggested by smoke north of the airport. No clue pointed to the gustiness that awaited. The tow plane lands and we need to burn off height. Full brakes produce 10 knots of sink, yet the descent seems to take forever. A long final and late removal of the breaks leaves us with little margin — poor. Wind gradient, lowered nose, a benign balloon and we're smoothly down right of the centreline, 67 minutes from Lake Placid.

Peter Whitworth is by the runway opposite the terminal and the wingtip is delivered right to him, ruling out the need to execute an alternate plan to clear the runway lights. Customs clearance is a formality. The gustiness of the crosswind had been a surprise but now it would help lift the left wing off the pavement quickly. The noise of the tip skid is terrible but short-lived: a couple feet of roll and we're level. The nose wheel had prevented the sort of yaw I had come to expect during low wing takeoffs in a 2-33 and 1-26. Our destination is Pendleton where the Grob will winter. The terrain is more familiar and we tow lower, and soon Pendleton pops out of the forest and the circuit is joined, high over the trees and through the gradient. Mindful of Summerstown, my concentration is better and we roll out on the mark opposite the hangar. A successful wave season ends, free of accident or damage to equipment.

The season ended on an exciting note for the 20 to 25 Gatineau pilots and the 12 Kars pilots that had flown either at Sugarbush or Lake Placid or both. At least 13 pilots from both clubs had gained significantly higher altitudes than are commonly achieved at home. Five pilots gained experience in cross-country aerotow. Towpilots took gliders into rotor, ridge, and wave lift, presenting some glider pilots with their first experience of these atmospheric conditions. For this pilot, post-solo dullness was banished. The opportunity to overcome queasy feelings about flying in very strange hostile terrain and legendary turbulence built confidence. Lake Placid had also forced me out of the 1-26 and into the Grob, a move I might not have made on my run at home.

In July, Dixon More had asked this two week-old student why he was interested in soaring. The answer then was less than coherent. Now the fall flying has presented me with the satisfactions that must form part of a better answer. □

ARTHUR NORMAN LE CHEMINANT

A retrospective of an active life.

Barry Jeffery

If you were not in gliding before 1976 you may not have actually met Chem because soon after that, as he approached the age of seventy, he began to taper off a bit. But it was all relative — his interest in flying and soaring never failed. As recently as last August he was flying ultralight aircraft or taking a ride with an old friend.

With all due respect to Don MacClement and Jim Simpson, it was Chem that really got the Soaring Association going. As well he brought in the first post-war high performance sailplane, and built a Canadian two-place sailplane design. He logged an astonishing number of glider types flown, and had the instructor rating, power licence, and Silver C certificate. But it was his devoted work for the soaring community for which, I think, he should be remembered in appreciation.

It has been said that a human being is a person to the extent that he is known by others; and, a person achieves immortality to the extent that he lives on in the memory and personality of others. Chem, more than most of us, must have been outstanding on both of these scores. Chem was known in person to almost the entire soaring community in Canada for several decades: he had thriving careers in two Air Forces, a government department, and in private industry; he travelled the world, lived in several countries, found a lovely wife in Newfoundland, and chased pirates in China. Besides this, he had a radio life which kept him in contact with others around the world for decades.

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Once upon a time, long ago, when there was no nylon tow rope, Chem le Cheminant got samples of ordinary nylon rope and tested them at the local gliding club. He found they were too soft, and prone to fraying. He talked to the chemical companies and encouraged them to improve them for the particular needs of glider towing. Durable tow ropes soon appeared.

A tow hitch was obtained from an American glider manufacturer. Chem found that when it was loaded it could not be released easily. The pawl was slightly reshaped, and a new element of safety was introduced into gliding.

These are only two examples of the meticulous care and attention to detail that characterized Chem's vocational and avocational lives. The examples also illustrate his community-mindedness. Solving the rope and

the tow-hitch problems was not just a convenience to Chem or to his immediate circle, but as in many other instances, it was part of a pattern of serving national and even international needs of the soaring community.

Chem's careers — all four of them — encompassed one of his two loves: flight. Twelve years in the Royal Air Force were followed by four years in industry and experimental work.

Putting on an RCAF uniform in 1941, he rose from Flying Officer to Wing Commander in his third, 18-year career. Then there were fourteen years in accident investigation with the Department of Transport, perhaps the most productive and distinguished of his career years. His other technical love, radio, was not as well known to his friends in the soaring world, but was another life-long interest. More later on that.

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Chem was born in 1907, and as a boy during WWI, he lived in southeast England. Flights of aircraft on the way to France triggered his imagination: at the age of eighteen Chem signed up for twelve years in the RAF. He had hoped to be apprenticed in radio. The powers directed him into engine work, though, and he did engine overhaul, testing and inspection, and rose to NCO-in-charge on many of the famous piston engines of the day — Jaguar, Kestrel, Pegasus, Gipsy.

In his early RAF days Chem was billeted in a barracks in the south of England. One of his barrack-mates was T. E. Lawrence, of Arabia. Chem remembered Lawrence, a short slim figure, standing with his back to the pot-bellied heater, telling stories. We can only imagine the stories a Lawrence could tell. Chem saw the film about Lawrence but he could never reconcile the tall figure of Peter O'Toole with the diminutive story-teller of the barracks.

In 1927, Chem was posted to the carrier "Hermes" in Hong Kong. In the services it has been customary for pilots to encourage technicians by offering them flights after repairs. Chem apparently seized every opportunity to fly. By 1935 he had logged 115 hours including 52 hours of dual, much of it in the Fairey-3 on Hermes.

Chem was a stayer as well as a starter. While in Hong Kong, Chem and four or five others from the base founded the Hong Kong Amateur Radio Society. Chem kept in touch. In 1980 he attended the club's 50th anniversary.

Back in the United Kingdom after Hong Kong, Chem earned his power flying licence in July 1937, but it is not known just when he started gliding. He left the RAF that year after completing training in aircraft inspection. As an Examiner for the AID (Aircraft Inspection Directorate) he worked at Rotax, and de Havilland. Chem then joined the company of a British pioneer aviator, Sir Alan Cobham. Chem was sent to Newfoundland with an aeroplane to assemble for experiments in flight refuelling for the British Overseas Airways Corporation transatlantic flights. The work in Newfoundland gave Chem an opportunity of using his radio experience, as well as his talents for innovation. Other work included experiments in de-icing, snow compaction, and radio.



Chem was transferred to Montreal in 1940 as a civilian attached to the RCAF Technical Detachment, but in 1941 joined up as Flying Officer and was posted to Amherst, then Dartmouth.

Chem must have had time to spare from work while in Newfoundland. An attractive young teacher, native of Carbonear and a competitive badminton player, visited Gander from Grand Falls on occasion, for a game or a visit with a boyfriend. Apparently the boyfriend's powers of attraction were no match for those of the well-travelled young Flight Lieutenant, and Phyllis Mary Cameron became Chem's bride and life-long companion in June, 1943. They had two sons who now live near Ottawa.

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To many of us, Chem for years was the Soaring Association of Canada. About forty years ago, Frank Woodward at UBC started the Thunderbird Gliding and Soaring

Club. Chem appeared the next day — or so it seems from this distance — to talk about a new national association for gliding and soaring.

Chem, besides having a great capacity for detail, seemed to epitomize the thinker on the large scale. Without a Soaring Association, no gliding certificates had been issued in Canada, let alone soaring certificates. Not only had some fine soaring flights been made in the previous ten years, but certificates had been applied for. There were no instructors. There were no instruction manuals, competition, licensing or regulation. There was no communication between enthusiasts. There was no help on technique or technicalities. Chem, recognizing that a national association could look to all these matters, was its greatest organizer and promoter. Moving around the country on air force business in the mid-forties, he was able to share his enthusiasm with isolated groups and individuals from coast to coast.

Chem took the key position of secretary during those productive formative years. FAI certificates were handled; an instructors' school was held with the Air Cadet Corps at Carp, from which twenty instructors in basic gliding fanned out to clubs across the country; a winch design was published; "Shorty" Boudreaault earned the first Silver C (*story in 1/83*), and an 80-page glossy yearbook was published. Its editor, Doug Shenstone, became the first editor of *Free Flight*. Chem's hand was active in it all. Later, Chem acted as a Director, SAC President, and SAC Historian at different times.

In about 1947, Chem was also president of the Gatineau Gliding Club. Chem realized that soaring in Canada would be limited if there was no access to a modern high performance sailplane. With the support of the Gatineau club members, the club ordered a new Olympia from Elliotts of Newberry. This 24:1 craft was designed for an Olympic event that never came to be, but it represented a practical, pleasantly balanced design of satisfying performance. Chem flew it, but not a great deal. He seemed content that it was giving soaring experience to others (*Canada's first Gold distance was flown in it by the author — see 6/82*). He was always ready to lend a hand in designing, organizing, and making repairs that resulted from a series of more or less serious prangs.

Chem's persistence and devotion to flying and soaring was never better demonstrated than in his work on the "Harbinger", a 1947 design by Beverly Shenstone and Waclaw Czerwinski. The prototype was started in Toronto, perhaps Agincourt — by Jack Ames and the late Henry Dow. After some years of struggle by them and Albie Pow, Chem took over construction in 1957. The Harbinger, which Chem must have been tempted to name the Albatross, went with him to Gimli and to two homes in the Ottawa area. After eighteen years, it was ready for flight. Chem treated it as a research project as much as a construction task. He experimented with glues, making samples for strength tests; he used microballoons for filling epoxy and levelling surfaces at a time when they were unknown to many of us. He consulted

with the designers at times; he was generous in correspondence with a Harbinger builder in England, sharing solutions to construction problems.

When the sailplane was finished, it was a classic. Chem flew it perhaps half a dozen times, as did some others, and then in a magnificent gesture, Chem quietly turned the machine over to the nation, to reside in the Aeronautical Collection of the national museums (*the Harbinger story appears in 4/84*).

I last saw much of Chem in 1978, when he was doing a sort of postscript to his fourth career, writing a book of words on accident investigation for the DoT. We had several enjoyable lunch hours together; my recollection is not of hoary reminiscences, but of discussions of current issues and activities.

Chem's first gliding log has been lost — temporarily, perhaps. He got the A certificate in July 1944, the B in August 1945, earned the 6th Canadian C certificate on 15 September 1946, and on 13 May 1962 earned Silver C badge 94.

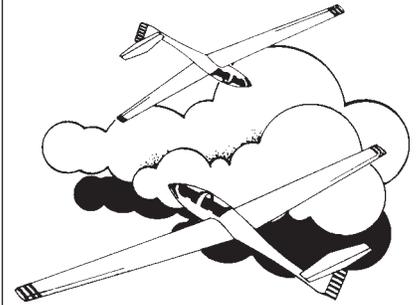
In all Chem had over 1000 hours of air time. In gliding, he had 1021 flights; 11 hours were dual, 181 hours solo, and 170 hours as instructor. The types he flew ranged from primitive or ancient like the Dagling and Grunau Baby, Minimoa and Mü-13, through the odd, like the Fauvel AV36 flying wing, to the relatively modern like the Phoebus and Blanik. In between were nearly every Schweizer (eight of them from TG-3A and 1-19 to the 2-32 and 2-33), other wartime glider trainers like the Laister Kauffmann 10-A, the Pratt-Read (TG32), the Olympia, half a dozen other German and French gliders, the Harbinger and several other Czerwinski designs (Robin, Sparrow, Loudon).

Chem's interest in flying at the low end of the speed scale extended to man-powered flight. For some years he worked on a Czerwinski design development in Ottawa with a group of amateur builders. Once again it seemed more like research than construction. Each piece and part was an experiment in lightness and strength.

Chem moved to a condominium on the St. Lawrence River for the last few years of his life. He visited another group of amateur builders in Brockville to enjoy more hours devoted to the newest form of flight since the Wright Brothers — ultralights. From their winter home in Florida, Chem and Phyllis went to an ultralight gathering, sparking Chem's interest in a spacey ultralight canard, the Falcon. So it was that back in Brockville last summer, in his 78th year — he seemed much younger — Chem drove to Carp for some dual in a Falcon, and gave the young instructor his first soaring experience.

Last August Chem had a powered flight courtesy of two old friends. Gliding pioneer Dick Noonan drove Chem to Kars, and he flew in a powered craft with Glenn Lockhard on what proved to be his last flight. Chem died of cancer on November 28, 1985. □

AN INVITATION



Arizona Soaring Inc.

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aerobatics courses

at Estrella

“I’VE ONLY BEEN TO BEDFORD”

Have you ever been in the right place at the right time?
Not often enough, you say, and I agree with you.
Well, recently I was for once ...

Colin Tootill
SOSA



In the fall of 1984, my wife and I went to Ridge Soaring in Pennsylvania for a week hoping to make up for a lack of flying during the summer. Unfortunately, because of unrelenting rain, we didn't even get the glider out of the trailer. Instead, a few days were spent in Washington DC (only a 4:30 drive from Ridge Soaring), visiting the Air and Space Museum of the Smithsonian Institute, amongst other places. When we left to go home, my wife could not understand why I was so cheerful. "The ridge owes me," I said, "the ridge owes me."

Last year I went back to collect. The weather was shaping up to be a repeat of 1984 with rain the predominant memory. Again, the ever-optimistic Tom Knauff promised better weather towards the end of the week; a return to Washington was in order. The ridge was getting deeper in debt.

We left for Ridge Soaring Tuesday, October 22, with the prediction that a cold front, presently dumping bad weather in the Rockies, would move through Pennsylvania on Friday. Saturday was a possible "ridge day". Whilst visiting Washington on Wednesday night, the TV weather maps showed the cold front's passage across the country had picked up. It would pass through Pennsylvania on Thursday. We returned to State College on Thursday in foul weather, but feeling optimistic about the next day.

Friday morning I was up at 6 and looking out of the motel window. It was too dark to see if the trees were moving but the sky was clear and the television said 5-15 mph NW winds. We got to the airfield only to find

dead calm and enveloping fog. Although it was daylight, the sun was not yet shining over the ridge. Tom Knauff explained that the very cold overnight air was trapped in the valley and the warmer air above was probably blowing straight over the valley as if it weren't even there. He said that as soon as the sun shone over the ridge top it would burn off the fog and start mixing the air. The prevailing wind would accelerate the process and, Presto! the wind would blow, and the ridge would work. He said it would be like flipping a switch when it happened.

At about 10:30 someone flipped the switch. I was in the office when I looked out and saw the wind sock spring to life. "Look," I said to Tom, "the wind's here." Tom seemed a little surprised (which gave me some satisfaction because it confirmed my suspicion that he was beginning to doubt his own forecast). Tom said he would call Flight Service and check the winds. A thirty second conversation had Tom hanging up the telephone and saying to me, "Perfect." The winds were in an ideal direction (310°) and speed (15 to 20 knots at ridge top) for a ridge neophyte such as myself.

The new badge rules meant achieving a distance task on the ridge was even easier than ever. My declaration of 505 km took me south to just short of the Bedford gap (93 km), north again past Ridge Soaring to Jersey Shore (151 km), south back to a turn point about 5 miles out into the Bedford gap (160 km), and finally back to Ridge Soaring (101 km).

I was airborne at 11:04 and two minutes later released in ridge lift a couple of hundred feet above the ridge. This was practically my first real experience of ridge flying and I turned cautiously south, flying the borrowed ASW-20 at 60 knots sideways. I had often flown crabwise to allow for drift but at higher altitudes where it was not so apparent. For some reason my mind had been programmed to think that ridge flying meant flying parallel to the ridge.

Well, my yaw string told me otherwise. By the time I was getting accustomed to the crabbing track, I was passing Karl Striedieck's field, six miles south. The novelty of flying along without turning or losing altitude was incredibly exhilarating. As I write this, I feel the excitement all over again. For me, having only flown cross-country in thermals, it almost seemed like cheating!

Flying on to Tyrone I remembered all I had heard, read, and seen (from the road) about the ridge. I flew conservatively 200-500 feet above the ridge at 55 to 70 knots, knowing that I had at least seven hours to do the task. The flight should be easy.

I had a sense of *déjà vu* as I flew the ridge noticing the various characteristics which I had read about: nowhere to land at Tyrone, a less severe slope to the ridge approaching Altoona, and then the Altoona gap. With this glider and today's wind, I could probably cross the four miles from a height of 3000 feet (the ridge at this point is about 2500 feet msl). I decided I wanted 4000. After all, 3000 feet from where? There was no clearly defined end to the ridge, it just gently sloped away into the valley. Where did the four mile gap really start?

I first turned to thermal just before Kettle Dam and by the time I gained enough height to survey the end of the ridge, I found that I should probably have flown another mile or so past Kettle Dam and look for a better thermal than the three knot one I had taken. Having been carried downwind, I now flew upwind across Kettle Reservoir and found a thermal to carry me to 4000 feet. Crossing to the south side of the gap I encountered thermal activity in which I did pull-ups. I arrived back on the ridge on the south side of the gap with plenty of height to spare. The steeper face from here to the turnpoint at Bedford gap worked better than the earlier parts. I was gaining confidence in myself and the ridge and found I could fly between 80 knots and 95 knots and still remain comfortably above the top of the ridge. I reached the turnpoint in one hour and felt happy with an average speed of 93 km/h. Going north again, I should be able to go faster.

The run back along the ridge to Altoona was quick (ten minutes) and a strong thermal took me to 4000. I wanted more height to make the more difficult upwind transition back to the ridge on the north side. Guessing that the thermal activity I had experienced earlier when crossing the gap was

probably still present, I flew into wind, out into the gap. If I did not encounter lift or hit heavy sink, I could fall back downwind onto the ridge which I was just leaving. As I flew into wind I encountered very little sink and some moderate lift enabling me to gradually turn across wind in a curving course back to the ridge at the north end of the gap.

Twice now I had successfully negotiated the major obstacle to completing the flight with little difficulty and I was faced with straight ridge soaring to Jersey Shore and back (220 km). My confidence soared! I was back passing Ridge Soaring 45 minutes after leaving the first turnpoint, an improvement to 120 km/h. The second turnpoint was reached 40 minutes later as I slowed going over the unfamiliar terrain and found the ridge not working as well in this section. Just before the turnpoint I saw three hang gliders on the ridge below me. They were moving so slowly that it seemed as though they were walking across the tree tops. I wondered if they had noticed me 500 feet above and whether they envied my ability to soar further and faster than they. Maybe, though, they preferred the lazy drifting across the face of the ridge, seemingly suspended in mid air by invisible threads.

Between Howard Dam and Milesburg the ridge runs parallel to Interstate 80. I watch the traffic crawl along at 55 mph as I sped past at 90. No radar traps up here, I thought!

An hour and a half after leaving Jersey Shore I was back at the Bedford gap looking for a thermal to carry me the five miles into the gap to the turnpoint and then back to the ridge again. It took a while locating a thermal. After several false starts, a few beats up and down the ridge and upwind away from the ridge. I finally climbed to 4300 feet (3400 agl). I set off for the turnpoint — Route 220 and a railroad intersection. Well, the map didn't show the railroad to be a disused, overgrown single track, pale imitation of a real railroad. It took five minutes of circling (thankfully in zero sink), checking my map and all features around before I was satisfied that what I suspected was a railroad — had to be a railroad.

Picture taken, back to the ridge, now only Altoona gap to cross one more time and home! Hope I can do the flight in under five hours. Altoona gap presented no problems as I crossed for the fourth and final time. In no time I was back at Tyrone looking down at a glider being de-rigged in a field. Past Karl Striedieck's field again, I slowed up as I sank to ridge top height for the first time in the flight. No point in pushing to beat five hours and ending up landing out. I was back at Ridge Soaring at four o'clock having flown five hundred kilometres in a shade under five hours. I had thermalled only six times.

Strangely, I did not feel very elated. The 300 km badge I flew took longer and was much harder work. It is a real thrill though to fly so far without turning or losing height. It is like driving along a multi-lane divided highway. For now, the ridge and I are even.

Now I am hooked. This ridge goes to Tennessee — and I've only been to Bedford! □

THE HARBINGER LIVES!

Tony Burton

Mention has been made in this issue and in 4/84 of the Shenstone/Czerwinski designed 2-seater, "Harbinger". Construction began in 1948, and was finally finished by Chem Le Cheminant and flown at Gatin-eau in 1975.

A Harbinger was also constructed in England, and a letter and photos sent to Chem in November of last year show that it is alive and well, and has lately been in Switzerland at the 13th International Vintage Glider Meet. It caused some interest because of its attractive appearance and good soaring capability (by vintage standards).

This "Mark II" Harbinger differs from the original plans in having the cockpit stretched 15 inches to correct an excessive rear cg, and it is significantly heavier than the Canadian original at a gross weight of 1100 pounds (it's little wonder that the owners say that excessive landing speed results in a long run-out)!

An owner, Austen Woods, continues in his letter, "we seem to be able to hold our own in thermals with an Olympia. Total airframe hours amount to 277 since built, and when exposed for recovering, the interior was very good and the restoration work needed was minimal."



The Harbinger Syndicate

We are still using the original trailer completed in 1952 and, whilst we intend to replace the old corrugated iron floor and the leaf spring suspension, we covered just over 2000 miles in Europe alone this year with no more trouble than an odd nut coming loose. The whole unit is about 22 hundredweight, so the whole trailer should be scrapped for a more modern lightweight design.

Fred Coleman (the Mk II builder) originally intended to finish it in 1952 but was held up by lack of information from the designers. He built the fuselage in three separate sections in a bedroom of his house and then removed the window frame to get it all out for assembly in his lengthened garage . . . he insisted on everything being solidly built and just right. The strength of the Harbinger is said to have saved him in the mid-air collision he had with a Prefect, and more damage was done in the subsequent landing than in the air. □



The Harbinger Syndicate

Bob Shannon, a member of the Mk II Harbinger Syndicate, prepares for a flight at Amlikon, Switzerland at the Vintage Glider Rally in August '85.

LOW LOSS INSTRUCTING

PART 6 — LANDING OUT

Tony Hayes

Adapted from
Australian Gliding

Bouncing your main wheel off a strange piece of real estate where quite probably no one has ever landed before has a certain fascination all of its own.

In turn, Off-field Landings as an exercise attract an air of something a bit different. I do not suppose there is a glider pilot living who does not retain a clear impression of the first away landing he made.

The activity does leave something to be desired in the accident area however, and therefore becomes part of the training syllabus; a later part when the pupil is a relatively experienced solo pilot.

Once more we are considering an exercise which is formulated directly by the instructor therefore how the exercise is constructed, what is stressed, what is allowed to pass without comment, what is seen, will all combine in the pupil's mind as a true picture, for he has no source of comparison. This article looks at the exercise from a low loss viewpoint, considering validity of the exercise and where effort/expense may be saved while providing improved in-built protection for the cross-country pilot.

EXERCISE INTERPRETATION

In essence we wish to satisfy all concerned that an individual pilot is able to select a suitable, previously strange area and safely land, doing so in a manner that indicates he would be able to repeat the process equally safely in other fields. So selection procedures stand out as the principle new item the pupil is going to meet. Couple this with the novelty of the exercise and we rapidly have pupil and instructor alike concentrating on landing in a field. Foremost in their minds might be the view that safely getting down in a field, any field — even one on the other side of the airport fence or a positively huge one just down the road — will satisfy the requirements of the exercise. The instructor's endorsement of the pupil's success is then read as approval for activity they will be happy to repeat later.

In many people's minds the exercise really does revolve around the magic moment of placing the main wheel on a strange piece of turf, which is a pity because most out-landing accidents begin to happen at between 1200 and 2000 feet, long before the glider touches down.

In fact, landing in a field has very little direct bearing on out-landing training. The require-

ment to land in a field is icing on the cake — an expensive and laborious process of putting the pupil's confidence fully at ease.

So, if we are going to take pupils into strange fields, then we should be quite sure that what we are doing is completely valid and must look beyond what the exercise superficially appears to be.

A landing, no matter where it occurs, is simply a process of rounding out, reducing speed, touching down and retaining control until the machine has stopped. To accomplish this we require a sufficiently large, level, smooth and unobstructed space. In off-field landing terms, selection procedures supply the suitable area and it will do no harm to be quite blunt here. If you get the selection procedure wrong, then although you may be still relatively high (600–700 feet), you have only two tasks left on the flight, deciding what sort of accident you would like to have and where you would like to have it, because you are definitely going to have one.

Selection procedures are quite divorced in both time and height from the actual touch-down, so let's go back to this magic touch-down and try again. A safe landing is the product of a controlled approach. A controlled approach is a product of correct final turn positioning. The final turn is a product of a controlled circuit which we have a reasonable chance of performing if we join the circuit in a controlled manner.

Sorry folks, we are back up above 1000 feet again and a long way from touchdown.

Now, what price a quick tow to 1100 feet, nipping down the road a few hundred yards and dropping into Joe's 10 acres? Quite right, you have had the delicious thrill of landing somewhere different and very little else. Or have you, for you are now technically on a cross-country — and gliding abounds with stories about gliders, fields and trailers. So you find the local bull is at home nursing a headache, therefore the gate is locked. As the trailer is infrequently used it celebrates with a couple of punctures.

The majority of the afternoon is now passed in playing tag with a disgruntled bovine, busting a gut lifting wings over the fence and haring around the country looking for a garage open on a Sunday.

If we are prepared to pay the price our activities sometimes call for, then we should ensure we are going to receive value. It is time to get down to what off-field landing training is all about.

SKILL — EROSION OR DEVELOPMENT?

While I was instructing full time, I had the privilege of working for a couple of clubs which allowed me to perform training development on their motorgliders — actually experimenting with flight exercises to structure training methods. Off-field landings formed part of this and one could perform 30 out-landings in a couple of days, more than most instructors do in a life.

In a motorglider the instructor has the option of remaining totally silent and letting an error situation develop, assessing how long it takes the pupil to notice and what kind of corrective procedure is used. Over several hundred landings, a few consistent problems were noticeable in a variety of pupils.

Pupils not uncommonly ended up virtually over the top of the field in their anxiety to have a good look at it, a position from which the only things you cannot see are the tailwheel and where you want to land. Inevitably, this resulted in difficulty in controlling the circuit entry as the glider had to be flown away from the field to achieve this. When good let-downs were achieved, it also became noticeable that some pupils had difficulty visualizing a circuit around a small field — attempting to fly a full height circuit from the upwind boundary of an area a third the size of the home airfield.

So why do pupil attempting to land in fields fail to employ the straightforward actions they use every time they fly?

Two points are valid:

- Pupils have an understandable enthusiasm to see as much as possible as soon as possible and thus have height to reach the alternative selection. This results in a glider being too high, too close, too often.
- It is not commonly realized that growing experience actively erodes basic judgement skills.

This may be surprising, but remember, gliding is a sport in which people wish to relax and not have to work too hard, so the process that sets in is as natural as it is usually unnoticed. With growing experience a pilot gains a pool of knowledge which may be used to reduce personal pressure. This is formed by an increasingly intimate knowledge of ground reference points — not the, "I always turn final over that tree" variety, but a certain knowledge of where the glider is relative to the launch point without having to look at the launch point.

single seater, for there is much you may do to help yourself.

- First, trap an instructor and extract a briefing on selection procedures plus opinion on local area peculiarities.

- Next, on a local flight position yourself between the strip and a variety of different sized fields, take a visual impression of the size of a parked glider at home and mentally 'park' it in a variety of fields.

- Having done this, now select a couple of fields which lie on your route to and from the club, you may thus examine them on the drive home and see how your judgement stands up on the ground

- Once you are coming to terms with assessing fields, again position yourself between the strip and a field and visualize circuits around it, choosing exactly where you would join the circuit and comparing it with the home circuit to see if it looks right.

- Finally, get into the habit of looking for surface wind indications and begin to examine what you are really doing in your normal circuit planning. **Fly with purpose, don't waste your solo flying.** Now, and only now, is it worth requesting off-field landing instruction.

For the instructor: as pilots approach the club experience levels for cross-country flying, begin studying their circuit activities, engage them in conversation on the subject, actively assist in avoiding the frustration of having to repeat basic judgement exercises and so appear to be preventing the pupil's cross-country flying.

Once checks have begun, take the pupil on a local soaring flight and compare notes on selecting fields — "where would you join a circuit to land in that one", etc. On your return home, closely observe the pilot's circuit rejoin actions and ensure that he is able to fly a controlled, half brake approach. It is not a bad idea on this flight to wait until the checkpoint has been passed, ask the pupil to look away from the strip and then tell you exactly what aiming point he has chosen. If satisfactory so far, we may now look at a simulated off-field landing.

Two prime objectives here — check the pilot's ability to visualize a circuit and correctly join it; and deny the pilot the use of 'known-safe' blocks of airspace.

The most poorly placed club is one with a single strip, but a valid test may still be constructed. Brief the pilot to fly a circuit with a half brake approach, around a point 2/3 of the way down the duty runway. This will give a rejoining point at a height/position the pilot will most probably not have seen before. Make the circuit direction opposite to the one normally used here if possible. This procedure should give instructor and pupil alike a fair appraisal of how judgement is going before we get into the expense and drama of de-rigging.

In off-field landing training, instill in the pupil the importance of controlling time, thinking about decisions early. Keep re-emphasizing that the key is a good letdown into a well-

visualized circuit around a well-selected field.

The pilot's understandable desire to have a good look at a strange field is easily controlled by thinking ahead. Let down on the 'dead' side of the field, fly upwind past it, thus having field, circuit and rejoin point in full view all the time. Cross over to the 'live' side and if, as often happens, the glider arrives high, the pilot knows exactly what to do because it is so routine: lose a set amount of height without really going anywhere. A 360° turn or two may now be confidently made as the pilot is controlling the situation, not vice-versa.

Many clubs have "house" fields, with landowners' permission to use them. Make elementary checks of trailer, de-rigging tools, tie-downs and ensure the crew know what they are doing. Now go and have a pleasant soaring flight to around 2500 feet a couple of miles out and thoroughly enjoy landing in a field, because it really is a magic moment.

Does that sound a little superficial for the style this series has taken? Sorry, but it really is that simple. All the work has been done over several weeks or longer, back at the home club. I have never seen an off-field landing go wrong when the pupil has plenty of time for selection and organizes circuit entry.

The circuit design begins to work, reducing workload and leaving the pilot increasingly free to look at all the new and interesting views. This is exactly what we want, reducing workload and increasing observational ability the lower the glider becomes. That sort of thing keeps you safe. But a quick tow into the field next door will undo all that preparation. If the pilot does not see the principles in action then plainly it has only been talk, not actually required when it comes to the real thing.

CONCLUSION

"Today I will begin showing you a little about how we achieve a normal circuit ..."
From these humble beginnings, way before solo, will be founded the later ability for a tired pilot miles from home on a gusty day to translate the unfamiliar into the comfortable known and still have the mental energy to deal with the unexpected.

Circuit planning is a basic skill which must be kept polished like a favoured trophy and exhibited as an example of a pilot's continuing right to take expensive club equipment aloft. It is also the basic core of off-field landings. Like many basics, familiarity breeds if not contempt then possibly complacency and we may fail to see the broader context of what we are trying to achieve — focusing down to what we may merely achieve today and often being disappointed.

So, how do you feel your personal approach to outlandings could make them a little more valid as well as a little more enjoyable? □

Next month, the conclusion to Low Loss Instructing, its background and its context in the current gliding movement.

Instructors in mid-wing tandems have to use this technique on every flight as the wing is in the way most of the time. The circuit area thus becomes blocks of 'Known Safe' airspace with alarm bells only starting to ring and normal judgement entering the picture when the glider enters an unfamiliar height/location combination. This may extend to approach control with little effort being made to select an aiming point as the pilot *knows* what the view is going to be like after finals.

Ever seen the reaction from a pilot who is flying when a runway change takes place? Some actually land before they realize the launch point is now the other end of the airfield. You may check yourself on this one. Go fly a right hand circuit into a launch point you have flown left hand circuits into and see how the workload alters (obtain permission if you need to).

Now, place a pilot who may only have flown at the home site over a totally strange field where nothing is familiar. There is no launch point, only a hypothetical landing point. See what happens. The normal judgement process makes itself available but is totally eclipsed by the desire to "have a good look". The glider is moved in, and circuit joining is effectively compromised. This distraction destroys the normal prediction element of circuit planning. The aiming point, and thus the required final turn, are forgotten as it is no longer normal workload at home.

Workload on the pilot begins to rise when circuit design should have it reducing, in fact, the glider may go all the way to the ground with the pilot working flat out just to keep up with it. In such circumstances we are less likely to notice the power lines or the electric fence, and the accident report will read, "while attempting an off-field landing", when more accurately it should read, "as a direct result of failing to rejoin a circuit normally".

ORGANIZATION

We may more clearly see off-field landing training as "applied circuit planning" in strange surroundings, harmonized with "field selection" procedures. Ninety percent of the work — the circuit — is routine. We had to prove we could handle this before we flew solo.

Selection procedures are new so we require some work there. Unfamiliar surroundings will require a little work on checking the pupil's real current judgement ability while applying controls to prevent him getting into trouble when viewing a strange field. All of this may be achieved at the home airfield, leaving the eventual outlanding as a pleasant excursion.

For the pupil: do not wait until you want to go cross-country before you request an off-field landing check. Start early, as soon as you are happy with local soaring in the

THE SAC GROUP AIRCRAFT INSURANCE PLAN

Everything you always wanted to know, and were always asking ...

Tony Wooller

SAC Insurance Broker

I am pleased to have been the insurance broker for the Association's Group Plan for the past three years. The past two years have seen a reduction in the hull insurance deductibles, a reduction in the rates and last year, as a result of the insurance questionnaire sent out at the end of December 1984, additional options of coverage that could be purchased. In March of 1985, the insurance carrier was changed to the Canadian Aviation Insurance Group and this resulted in a broader policy wording and a speedier settlement of the claims.

INSURED VALUE As for the 1986 insurance rates, the executive of your club will be getting a communication from the Insurance committee. I would like to address one important aspect of the coverage. It concerns the insured values of the club and privately owned gliders and tugs. When considering the values for the forthcoming season, these should be close to what it would cost you to purchase another glider or tug of similar age and condition should you suffer a total loss as a result of a flying or a ground accident. As far as tugs are concerned, does this include the amount of money that was spent on the engine overhaul or other maintenance work this past winter? The sum insured should not only include an amount for the actual tug and glider, but include all the additional instruments which you may install, including your parachutes. I understand some of you take the parachute and your more valuable instruments home with you after each week-end of flying, and more specifically during the winter months. The policy covers these whilst stored in your homes.

The policy has a very broad "All Risk" basis and the value is agreed between you and the insurer. In the event of a total loss you will receive the policy sum insured, less the appropriate deductible and the insurer will keep the salvage. While it has not yet happened in the case of a SAC aircraft, aviation insurers have found that many people are grossly undervaluing their aircraft in the short-sighted thought that they will never have an accident and try and save a few premium dollars. What has happened is that in view of the very high cost of repairing aircraft, plus the fact that all repairs in many instances are with 1986 replacement parts, the repair estimates exceed the value of the aircraft. As a result, the insurer pays a total loss for the aircraft and keeps the salvage. From the salvage proceeds, the insurer considerably reduces the amount of their claim. However, the

aircraft owner suddenly finds there is nowhere near sufficient money to go out and purchase a replacement aircraft. So for the sake of saving \$100, the owner has to pay out an additional \$10-20,000 for a replacement.

From a review of the current values of the SAC fleet there are some tremendous differences in values, and you will be hearing further from your Insurance committee on this point. For those of you who only purchase Liability insurance, whether under the SAC scheme or through COPA, please bear in mind that losses have occurred because of hangars catching fire or being destroyed in a storm or a trailer has overturned or been involved in an auto accident whilst being towed.

TRAILERING On the subject of towing and the trailers utilized, the SAC insurance policy covers the glider whilst it is stored and being towed around in the trailer, but there is no coverage for the trailer. The liability associated with the trailer and any physical damage coverage on the trailer that may be required can be provided by an automobile policy and they should be declared for Liability and/ or Physical Damage coverage to your automobile insurer.

PROOF OF COVERAGE Concern has been expressed in the past that the individual glider owner receives no proof that his glider is covered. The club executives received three copies of the policy text, which consists of some 25 pages and we believe at least one copy is available for interested individual club members to read. The 1985 policy text was mailed to the club presidents in May of 1985 and we are hopeful that we can get them issued in April this year. The actual club schedules, listing all the gliders covered, were not issued until September 6, 1985 due to some clubs not providing their lists to Ottawa until early August. In order to speed up the issuance of these schedules, you the individual owners have to advise your club treasurer that you want coverage in 1986, your glider sum insured, whether you want Ground and Flight coverage or just Ground, your Liability limit and pay the premium. The club treasurer has then to send that money along with the up-to-date list to Ottawa so it can be processed through to my office. The sooner everyone does this the sooner the schedules are issued. From an individual's point of view, a glider is covered for 1986 as soon as the club's bank cashes your cheque. The same rule applies for those people joining the plan during the policy year.

PERIOD OF COVERAGE If an individual owner, or even a club, does not pay the premium by 31 March, as he does not intend to start flying until May or June, he cannot come back into the scheme on a pro-rata basis until 31 March 1987. As he was insured in 1985 he has to pay the full premium for 1986. Also, as he reports late, the glider will not be shown on the schedules when issued. His glider will eventually be added by endorsement, and the reluctance to pay on time causes additional work for the club treasurer, SAC office in Ottawa, and the offices of my company and the insurer. The individual glider or tug owner has no coverage from March 31st until the date his cheque is cashed, but he still has to pay the full annual premium.

Last year the insurer issued an information card for each glider. This year the card is being modified such that it will be very similar to the automobile insurance card that you all have and these will be issued from Ottawa as soon as the SAC office receives the schedules from the club treasurers.

LIABILITY COVERAGE A brief word now on the liability coverage provided by the policy. The pilot of every glider and tug insured under the scheme is insured for at least \$1,000,000 for third party Bodily Injury and Property Damage arising out of an accident involving the glider and/or tug. The coverage includes liability to any passengers. It can also apply to the pilot, as long as he does not own the glider or tug if an accident occurs which can be proven not to be the pilot's fault. In addition, the policy includes coverage for Medical Expenses up to an amount of \$1000 which are not recoverable from a Provincial Health Scheme or private insurance scheme.

TOW PLANE COVERAGE From time to time some of the clubs have raised the question of coverage on the tugs. The tugs are only insured whilst being used on club business. Coverage does not apply when used to show your friends the countryside from the air or to fly to the neighbouring city or town for a non-soaring meeting. If the passenger is there for a soaring matter, then he is covered. The question has also arisen as to SAC's pilot stipulations for the towing of gliders. You may have someone interested in becoming a tow-pilot but this

THE SAC GROUP INSURANCE PLAN

person needs to build up hours. Going to the local flying club can be very expensive. Subject to the approval of the club Chief Towpilot, the tugs can be used to build up these people's hours in the form of local circuits and touch-and-goes.

If a club tug is privately owned and the owner also wishes to utilize the plane for his own private and business uses, we have written these aircraft on a separate policy outside of the scheme but with the same insurer at very competitive prices. This also provides uniformity in coverage between the insurers of the tug and the insurers of the gliders.

CLUB PREMISES LIABILITY Each club insured under the SAC aviation scheme also receives, free of charge, a limit of \$100,000 for Third Party Bodily Injury and Property Damage. This coverage protects the club and its officers and members from claims arising out of the club premises and the land that you occupy. If a visitor to the field or a club member injures themselves or suffers damage to their property, the club has coverage. The coverage also applies to any liability the club may have arising out of any tent or trailer park there may be on the club premises for club members. A couple of clubs have swimming pools and the coverage applies to any liability there may be arising out of accidents occurring therein. Rather than manhandling the gliders back to the hook up point to the tug, some clubs use old tractors and cars to pull the gliders back. Should an accident arise out of the use of such a vehicle on the club premises then coverage is provided under the Premises Liability. Who cuts the grass at your gliderport? If it is a club tractor and mower, then any liability arising therefrom is covered under this policy.

Over the past couple of years I have read with interest the efforts of some of the clubs to attract outsiders by having gliders on exhibition in shopping malls. Has the mall owner asked for a certificate of insurance giving evidence that the club has liability coverage should an accident occur involving the club display? In three years, only one club has asked for such a certificate.

Some clubs, and probably the Provincial Associations, have meetings outside of the club premises. If you rent a hall or meeting room, the club has coverage under the Premises Liability section.

IS \$100K ENOUGH? The immediate question that arises is if \$100,000 is sufficient. Many shopping malls request at least a \$1,000,000 limit of liability. Is \$100,000 sufficient for an accident occurring around the club premises? What is the agreement between the house trailer owners and the club should something happen in the trailer park area. Each trailer owner should provide the club with proof that they have liability insurance on their trailer. The club premises cease at the entrance to the trailer. Should someone injure themselves on the way to the trailer then it is on club premises, but as soon as that person starts to climb into the trailer

then liability coverage has to be provided by the trailer owner.

On another aspect concerning liability, the club executive should make certain that any glider not insured under the SAC scheme using the club premises and tugs (or winches) provide proof of at least \$1,000,000 liability insurance and that the coverage is applicable to anyone flying that tug and/or glider.

Provision is available under the SAC scheme to increase the Premises Liability to \$1,000,000 or more and this cost will be made available in the communication received from the Insurance committee. Some clubs have bought this Premises coverage from other sources, but so as to avoid duplication, and probably at a much cheaper price, it would be much more advisable for this coverage to be purchased through the scheme.

Some of the clubs may have insurance on your club buildings and hangars. We will be very pleased to review the coverage and policy wording you currently have and to provide quotations when these policies come up for renewal. In view of the very restrictive insurance market at present, please give us at least two months to work on your behalf and at the same time as providing the current policies also enclose details of construction, diagrams and/or photographs of the club's buildings and hangars.

I hope the foregoing raises some salient points on the scheme for all club members, and I would be happy to discuss matters with you if you care to give me a call at the office. My number is shown in our advertisement elsewhere in the magazine. □

My thanks to Tony Wooller for preparing this clear description of our insurance scheme. I know many pilots have not understood the limits of the policy.

THAT "FINAL" TURN

Al Schreiter

Chairman, Insurance committee

Our insurance statistics tell me that the majority of our accidents take place in the landing phase of flight. The word final takes on an unwanted double meaning. Add to this the fact that many experienced pilots show up in the accident statistics, and one cannot help but wonder if not only ignorance of the novice, but complacency of the experienced, are contributors to disaster.

There is good reason why the landing phase comes in three equal parts, and I mean equal in importance. Dozens of years of experience have taught us that a "pattern" is essential to safe landing. One can land without flying a pattern, but not safely every time. This applies not only to landings at an airfield, but even more so to outlandings in strange farm fields. The results of thermalling to the very last minute combined with skipping a proper pattern can lead to outlandings fatal to the airframe, the pilot or both.

"Landing" means flying a decent downwind leg to get set up properly, observe the field, adjust altitude and speed; followed by a reasonable crosswind leg to again observe the field, calculate the glide angle for a good final, readjust altitude, followed by a properly banked turn onto final at sufficient height, and controlled descent to contact with the ground. To do the entire sequence takes time.

So what's the big deal? For one thing, there is literally no room for errors. Accidentally stalling is no big deal at 2000 feet, it can kill you if it happens at 200 feet. Sloppy turns are a mere inconvenience

at 2000 feet, they can kill you at 200 feet. Incipient or real spins are no big — get the idea?

We tend to forget that flying near the ground gives us visual impressions that do not fit the brain's accustomed patterns at altitude. Too steep a turn on to final, caused by too tight a circuit, will result in too great a rate of turn and an apparent nose down attitude. This attitude combined with the now visibly increased sink rate (the ground is coming up at me) can cause one to pull back on the stick. Bingo!

When turning onto base or final, do you remember that a 45 degree bank increases that stall speed by 20%? That a turn radius which looks small at 3000 feet appears to be much bigger at 300? On the other hand, remember what flat, slow turns combined with a lot of rudder can do to your flight path? Compressed circuits also compress the available time and things begin to happen very fast.

Haste bends planes and pilots! To sum up:

- steep turns cause a considerable increase in stall speed,
- open divebrakes not only cause drag, but also increase stall speed,
- ground turbulence can add to your problems,
- laminar flow wings tend to stall more abruptly,
- aileron, rudder or elevator mistakes are unforgiving near the ground,
- lack of airspeed kills,
- stress situations do not good landings make.

A proper pattern helps you to avoid the potential excitement mentioned above. □

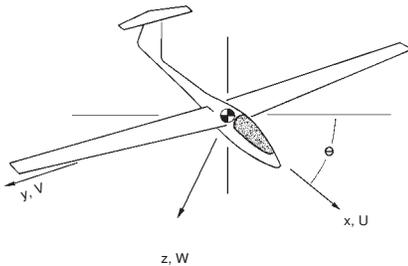
A QUESTION OF SPIN RECOVERY

Stewart Baillie
Gatineau

Around the fireplace the other day, the question arose: "Are typical 'glass' ships more dangerous in spin recovery than say a 1-26?" Of course both sides of the ensuing argument had supporters and neither side cried "uncle". The following is my own humble attempt to look at the problem analytically.

The Acceleration Difference

The main argument of those saying glass ships can present more danger in spin recovery was that the 'cleaner' glass ship will accelerate faster to V_{ne} during the dive following the spin. The diagram below illustrates a diving situation:



The analytical description of the forces in this diagram are, to a first approximation:

$$\text{Drag} + mg\sin\theta = m(\dot{U} + QW) \quad (1)$$

$$\text{Lift} + mg\cos\theta = m(\dot{W} - QU) \quad (2)$$

where U and W are velocities in the x and z axes, Q is the pitch rate, and the 'dotted' terms are time derivatives.

Assuming a negligible pitch rate term, we can express the acceleration of the aircraft, U , as

$$\dot{U} = g\sin\theta - \text{Drag}/m \quad (3)$$

expanding (3) using the lift and drag coefficients C_L and C_{D0} results in:

$$\dot{U} = g[\sin\theta - (C_{D0} + KC_L^2)q/Lw] \quad (4)$$

where: K is the induced drag term
 q is the dynamic pressure ($\rho V^2/2$)
 L_w is the glider wing loading (W/S)

Replacing the C_L term with an expression for load factor (n), the number of "g" the glider is experiencing, results in:

$$\dot{U} = g[\sin\theta - C_{D0}q/Lw - Kn^2Lw/q] \quad (5)$$

where: $n = C_L q/Lw$ (1st order approx.) (6)

Equation (5) illustrates that the difference in acceleration between two aircraft is a function of each aircraft's C_{D0} , L_w , and K .

Typical values of these parameters for a 1-26 and a LS4 are:

C_{D0} (1-26)	0.0125	(LS4) 0.0107
K	0.0379	0.0150
L_w	3.94 lb/ft ²	6.37 lb/ft ²

Plugging the above values into equation (5) and calculating the difference between the two gliders for the same load factor (n), results in numbers on the order of .06g at the worst possible case (3g, 100 kts). Since spin recovery dives usually start at attitudes of 50 degrees down or more, this .06g difference, when added to the $g\sin\theta$ term, makes up about 7% of the total acceleration. This cannot alone account for the perceived difference between the two types of gliders, so maybe we should look at the full trajectory of the dive recovery.

The Trajectory Difference

After stopping the pitch, roll and yaw rates of the spin, and unstalling the wing, the aircraft must pull out of the ensuing dive. At any given instant, the radius of this pull-out (neglecting the small coriolis term) is given by:

$$r = mV^2L - W\cos\theta \quad (7)$$

Using lift coefficient, this radius is

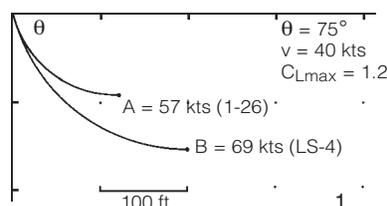
$$r = [gC_L\rho/(2L_w) - g\cos\theta/V^2]^{-1} \quad (8)$$

where: ρ is the air density
 C_L is the current lift coefficient

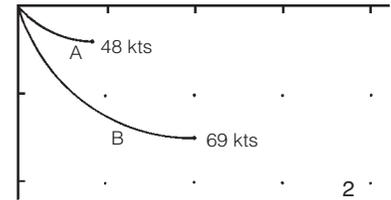
Equation (8) points out that a lower wing loading aircraft, such as a 1-26 can pull-out (or turn) tighter for a given C_L and speed. Everyone who has seen a 1-26 turn inside a glass ship in a thermal will attest to this.

The comparison of the dive recovery between these aircraft types becomes more complicated at this point because of limits in aircraft load factor (most aircraft are certified to 4g at V_D). With the help of an IBM computer, I modelled the entire dive/pull-out using discrete integrations of equations 5 and 8 for a number of cases. The trajectory plots of each aircraft follow.

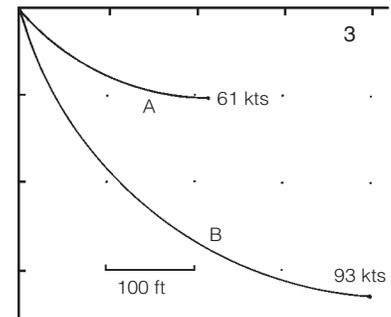
Plot 1 shows both aircraft with the same initial nose-down attitude (75°), velocity (40 kts), and recovering (at a $C_{Lmax} = 1.2$) while observing a 4g limit. On level recovery, the glass ship has gained 12 kts on the 1-26 and lost about 60 feet more height.



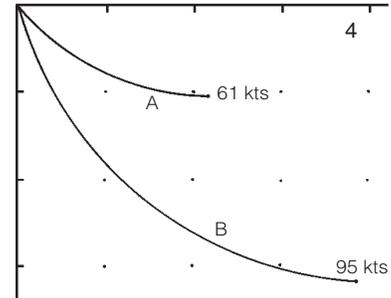
Plot 2 assumes that a 1-26 would tend to begin recovery in a shallower attitude (50°) and that the C_{Lmax} of the 1-26 is probably slightly more (1.4 vs 1.2). At recovery, the difference is 21 kts and 105 feet.



Plot 3 is the same as 2 but assumes a less aggressive pull-out using half the available lift coefficient of each glider. The difference at recovery is 32 kts and 220 feet.



Plot 4 is the same as 3 but assumes that the glass ship begins recovery at a higher initial velocity (55 kts). The recovery differences are now 34 kts and 200 feet.



These four cases all assume no difference between the 1-26 and a glass ship in arresting the yaw, roll, and pitch rates and in unstalling the wing. In actuality, the larger, heavier glass ship will probably have a higher ratio of inertia to control-power in each axis and its wing is more sensitive to angle of attack around the stall angle. These points make the altitude lost and velocity gained during the first phase of spin recovery for a glass ship higher than for a 1-26. In conclusion, this examination points out two things:

1. On spin recovery a glass ship will be flying faster than a 1-26. Depending upon the magnitude of each aircraft's V_{ne} , this may or may not be significant.
2. In addition to the altitude differences of the spin arresting phase of spin recovery, a glass ship will lose about three times the altitude in the ensuing dive recovery.

I hope that this examination reveals the answer and ends the argument. □

HANGAR FLYING

A DIGNIFIED POSITION

In a recent issue of *Skysailor*, journal of the Hang Gliding Federation of Australia, there was an advertisement seeking volunteers to help run their next State Championships. What the advertisement asked for was a "Meet Head and Competition Officials".

Having a great deal of respect for those who take on such onerous tasks, we think the HGFA might have been a little more careful in their choice of titles.

While the hang gliding fraternity are quite free to call their officials what they like, we think our term Contest Director is a little more dignified than "Meet Head", which could be misunderstood.

from Australian Gliding

SCHEMPH-HIRTH USING A NEW GEL-COAT

The Schempp-Hirth company has advised that it is now using a modified gelcoat on its sailplanes. They claim the new coating provides a smoother surface after sanding and polishing, the surface gloss lasts longer, and the gel-coat is more weather resistant.

FREQUENCY SELECTIVE SUNGLASSES

A new type of frequency-selective sunglasses are now on the market, and have been found to be very effective for pilots.

The coating material on the lenses has a sharp cutoff between green and blue light, filtering out all UV and high energy blue, and the harmless light from about 510 nanometres up, green through red, passes with about 43 percent attenuation. As an extra benefit, chromatic aberration (the inability of the eye to focus on all colours at once) is markedly reduced since the low end of the colour spectrum has been filtered out. As a result, the eye can focus more easily on the remaining light allowing an improvement in seeing small objects in detail at a greater distance.

The reviewer states that air traffic is easier to see, and that clouds, especially on hazy days, are clear, crisp, and deeper than seen before. Everything seems to be in extremely sharp focus, there is no eyestrain or squinting, and the eyes are fully protected. It is noted that the frequency response of these glasses is similar to the eyes of eagles and hawks.

For more information, one supplier who offers selective filtration glasses is "Suntiger" 2713 Foothill Blvd. La Crescenta, CA, 91214. Tel. (818) 957-6291

from SOARING

1985 GLIDER DIRECTORY

The following list has been compiled by Al Schreiter, Chairman of the SAC Insurance committee. Note that this list does not include gliders or towplanes which did not participate in the SAC group insurance last year.

GLIDERS			
2-33	24	DG-202/17	2
1-26	17	Cobra	2
Std. Jantar	17	Cherokee	2
Blanik	16	Bergfalke	2
2-22	10	Zugvogel	1
Libelle 201	10	Woodstock	1
Ka6	10	Tinbus	1
Std. Cirrus	9	Skyhawk 3	1
Pik-20	8	SF-27	1
ASW-19	8	RHJ-8	1
Skyhawk 4	7	Pirat	1
ASW-20	7	Monerai	1
Std Astir	7	M-100	1
Pilatus B4	6	LS-4	1
Lark twin	6	Libelle 301	1
RS-15	5	L-Spatz	1
K8	5	Kestrel 19	1
1-23	4	Javelin	1
ASW-15	4	HP-18	1
Twin Astir	4	HP-2	1
1-35	3	Hornet	1
1-34	3	Diamant	1
Mosquito	3	DG-200	1
K7	3	Dart	1
K-13	3	BG-8	1
Duster	3	BG-12	1
Open Cirrus	3	Total	262
Austria SH1	3		
Tern	2		
Puchacz	2		
Pioneer	2		
Pik-20B	2		
Phoebus C	2		
Nimbus II	2		
Mini-Nimbus	2		
Lark 15m	2		
LS-1	2		
HP-14	2		
HP-11	2		
Grunau Baby	2		

TOWPLANES

Citabria	15
Supercub	7
Cessna 150	4
Scout	4
Cessna L-19	3
Cessna 305	2
Champion	1
Cessna 182	1
Challenger	1
Wilga	1
Total	39

EMERGENCY AD ON LIBELLES

On 30 Oct 85, the FAA issued a mandatory emergency AD on all Glasflügel Libelles — Standard, 201 B, H-301, and H-301 B. If you Libelle owners haven't got the word yet, the problem is the danger of fatigue failure of the elevator linkage in the area of the welds at the base of the control stick. Failure could lead to total loss of pitch control.

The AD requires inspection within 10 hours and replacement within 25 hours of affected parts. Details are in Glasflügel Technical Notes 201-22 and 301-31, available from Mr. Hans-Joerg Streifender, Bruelstrasse 12, 7318 Lenningen 2, West Germany.

OUT OF CONTROL

A major topic of any current aviation conversation, possibly the major topic, is product liability, the skyrocketing costs of which are affecting just about every conceivable activity of society. Aviation is not alone in the economic threat that it faces, and this is probably fortunate for aviation because were this threat not so pervasive, it is unlikely that anything would be done to bring relief to this industry alone. As it is, the universal concern over the out-of-control product liability situation almost guarantees that governments will have to act.

Aviation is certainly not unique in the danger to its future that it faces, but it is perhaps one of the most sensitive to the hazard. Last month the General Aviation Manufacturers Association released its position paper on product liability. The paper is an excellent summation of the problem and its effects.

Product liability insurance costs for general aviation airframe builders alone will total about \$135 million for 1985, the GAMA paper says. The industry's insurance bill has grown an average of 500 percent since 1981 for companies responding to a recent industry survey. A few companies have endured increases of 2000 and 3000 percent in the last four years. Increases of 100-200 percent every year are commonplace in this decade.

The industry has been downsized to control costs by reducing labour and overhead to match the size of today's market. Yet despite cost control measures in every other area, the cost of product liability remains wildly out of control.

Based on shipments of about 2000 airplanes in 1985, the insurance tab for airframe manufacturers alone averages \$70,000 per airplane — exceeding the selling price of many basic two- and four-seat aircraft. And unless changes are made, these costs will get worse.

With an improved safety record for general aviation, why are product liability costs getting drastically worse? The answer is skyrocketing court judgements, large settlements and the increasing number of suits against manufacturers in our litigious society.

Insurance bills are only part of the financial burden for aircraft manufacturers. Additional product liability costs include substantial sums for self insurance to provide protection against losses which are not covered by insurance. Then there are legal fees, the cost of in-house lawyers and outside legal counsel. Expenses for travel, research and other costs must also be paid. Technical expertise is a fourth cost element. Some senior managing engineers spend as much as half their time on product liability matters.

Ironically, only a token portion of all these costs ever reaches those actually injured in accidents. One company study shows that only 17 percent of what it spends on product liability reaches the injured. The rest goes for legal fees, insurance and other expenses.

What all this means is that today's buyer is paying part of the \$135–200 million tab, or about \$70,000 per airplane. In 1972, the cost was \$211 per plane; in 1962, \$51.

The GAMA paper recommends a federal product law that would include the following elements:

- Negligence determinations concerning product design should be based only on the "state of the art" when the product was designed.
- A manufacturer's liability should be limited to the extent the manufacturer is found liable: the manufacturer should not be liable for the negligence of others whose actions (not related to aircraft manufacture) contribute to accidents.
- Improvement in a design in subsequent years of manufacture should not be used to show that the original design was deficient.
- There should be some reasonable limitation on the time a manufacturer can be held liable for design and construction of his product.

from "The Canadian Aircraft Operator"

Free flight issues have been returned to the National Office for incorrect address of:

Kenneth Evans, Box 81, RR 1
Ottawa, Ontario, KOA 2N0.
Tracie Wark, Apt 303, 277 George St.
Toronto, Ontario, M5R 2R1
Chris Dabolt, 629B Plumer Street,
Costa Mesa, CA. USA 92626

If anyone knows the correct address for any of the above persons, would you please send it to the National Office.

free flight — ANNUAL REPORT

Tony Burton
editor

1985 was a good year for **free flight**, as I think is evident if you spread those six issues before you and riffle through them once again. There were excellent contributions over the spectrum of soaring subjects. With three 28 page and three 24 page issues, the '85 content sorted itself out roughly as follows:

	items	pages
Flight stories	11	19
Training/instruction	8	15
Technical articles	4	9
SAC affairs in general	16	9
Safety articles	20	8
Humour	6	7
Sporting/competition	5	6
Publicity	4	3
Soaring history	3	3
Editorials/opinion		14
Hangar flying		8
Club/provincial ass'n news		7
FAI badge/record reports		5

On average, the balance in the content was good — but there were times when the mail was too quiet a few days before deadline until that one good story arrived to fill out the issue. I wish to thank everyone who supported my efforts by sending me material. Although I have no hesitation in borrowing articles from other magazines if they are useful or interesting to Canadian pilots, I like to see the best come from us.

A special thanks goes to Gil Parcell, Les Waller, and Albert Seaman for the excellent cartoons and illustrations — I can state without hesitation that we top all other soaring magazines in this regard. It's just as well, because you photographers out there seem to be a shy breed. Cover photos have been good this year, but only because some Alberta pilots showed their snaps at gatherings I've attended, and I have forced them to loan them to me. It would be good to have some stock on hand to choose from, so contribute please, and that includes you Easterners.

Certain stories that were published last year stood above the rest, so allow me to make some informal awards now:

Technical article

"Die Winde". 1/85 by Eric Durance

Research article

"Soaring the North Mountain Ridge"
2/85 by Dick Vine

Safety article

"Anatomy of a Hard Landing", 6/85
by Russ Dunham

Flight story

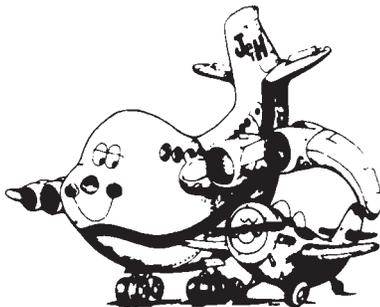
"Sleep Late, Drink Long", 4/85
by Seth Schlifer

Editorially, I have continued an emphasis, begun in 1984, to use page 2 of each issue to present something controversial, educational, or maybe even useful. I keep hoping that SAC members will be moved enough to comment, but none have yet. This leads me to believe that what's been printed there isn't nearly outrageous enough, or just that it isn't remembered a day past the time the issue goes back up on the bookshelf. The fate of 99% of all magazine material is that it is quickly forgotten because it is ephemeral (although one way to make it less so is to grab a whole stack on a quiet evening, and reread the stuff that strikes your fancy).

This is simply a short reminder that **free flight** is occasionally useful beyond just being the entertainment of the moment. But as I said, magazine material being what it is, the ball is in your court. For example: have you CFIs and instructors photocopied the articles on low loss instructing and put them in your "How-to-be-a-better-instructor" file — you do have one, don't you?? For example: I get financial reports from many clubs and **know** that your club is hurting on membership, low glider utilization, etc. For that reason, I printed articles that could help you work on that problem without a lot of unnecessary reinventing (or spinning) of wheels. So, how many of you club executives and membership secretaries have re-read or discussed what you will find in 1/84 p2, 3/84 p2/20, 4/84 p2, 6/84 p2, 2/85 p2, 4/85 p2/p12/Musings, 5/85 p2, and 6/85 p16?

I look forward to continuing as editor for the next year, and once more I ask for lots of stories about how you are getting on in this great sport, especially from you newcomers, even if you can't tipe or spel. □

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The following badges and badge legs were recorded in the Canadian Soaring register during the period December 1, 1985 and January 31, 1986.

GOLD BADGE

221 Walter Herten SOSA

DIAMOND DISTANCE

Karl Doetsch Gatineau 513.4 km ASW-20 Dalhart, Texas

DIAMOND GOAL

Lester Oilund GPSS 308.6 km Phoebus C Grande Prairie, AB

GOLD DISTANCE

Lester Oilund GPSS 308.6 km Phoebus C Grande Prairie, AB

GOLD ALTITUDE

Theodore Froelich Gatineau 3545 m 1-26 Warren, Vt.
Stewart Baillie Gatineau 3505 m Jantar Std. Warren, Vt.

SILVER ALTITUDE

Piotr Kurylowicz York 1250 m 1-26 Arthur, ON
Peter De Bay Vancouver 1646 m Blanik Hope, BC
Stewart Baillie Gatineau see Gold altitude

SILVER DURATION

Joseph Chevalier London 5:10 1-26 Embro, ON
Peter De Bay Vancouver 5:12 Blanik Hope, BC
James Beattie Kawartha 5:26 Puchacz Chemong, ON
Ian Dudley Gatineau 6:10 Skylark 3B Pendleton, ON

C BADGES

Peter Willis York 1:15 1-26 Arthur, ON

Campbell

Printer ad,
Ottawa

From The Desk Of The Executive Director

Jean Matheson

With annual meeting preparations well under way, our thoughts now turn to the busy pre-soaring season — membership updates, insurance programmes, etc.

Just as we thought we were getting things under control at National Office we lost our secretary Joanne Hagar. We couldn't compete with the salary offered to her by an outside agency. Rosanne Pauquin has replaced Joanne and is now struggling to make sense of some of the soaring terminology and learn the general routine. Rosanne is bilingual so may surprise some of our French speaking members when they telephone the office.

In January the Board of Directors held a mini-planning session. Howard Goldberg, of the RCFCA (who some of you have met) acted as facilitator. Due to insufficient time it was not possible to identify all problems/opportunities. I have requested funding from Sport Canada to allow SAC to have a full planning session in 1986. We won't know whether this funding has been approved until after the beginning of the federal government fiscal year.

We have requested approximately \$170,000 from Sport Canada to assist SAC in current and developing programmes. However, it is unlikely we will receive any more than the amount received in 1985. We have, in addition, received \$1500 to be used for the production of promotional material in the French language. This contribution must be used prior to March 31, 1986. Your Publicity Committee is working on the programme involved.

Discussion continues regarding residency at the National Sport and Recreation Centre. The benefits to be obtained by residency would be considerable. However, the requirements by Sport Canada for continued funding and residency are quite explicit. Of the seven requirements the ones that SAC may not at the present time, meet are:

- 1 The National Sport Organization must be recognized and receive support from at least eight provinces and territories. The provincial support must average \$5000 per province/territory.
- 2 The National Sport Organization must provide service to a minimum of 2000 members registered at the provincial or national level, with the demonstrated potential to increase to 3000 members within a three year time period.
- 3 The National Sport Organization is expected to provide service and govern competition in the sport for both sexes, all age groups, and all disciplines of the sport.

The criteria is followed by two notes:

- Organizations will be considered for federal funding if they meet the above criteria and providing federal funds are available. The federal government may, from time to time, for financial reasons, declare a moratorium on the acceptance of new "client" organizations.
- Organizations which do not meet the above criteria, but which are currently recognized as Sport Canada clients for funding purposes will have two years to meet the criteria. The federal government may require that interim targets be met by the end of the first year of probationary status.

There are additional requirements relating to placing at World competitions; that is, top 15 placings in at least 50% of the events on the World Championship Programme. In looking over past records, it would appear that SAC has achieved this in the past and the next category of placing in the top 10 should be attainable.

As so many clubs have indicated that the number of 1984 annual reports delivered to them was in excess of those required by interested members, it has been decided this year that each member will be provided with a card (inserted in the next issue of **free flight**) to be returned to National Office indicating that you wish to receive a copy of the 1985 annual report and the Minutes of the 1986 annual general meeting.

The Segelflug Bildkalender 1986 was a terrific success. We even sold the office copy. Ensuring the success of the sale of this item took a great deal of time on the part of several members who are to be congratulated for their efforts. Have you noticed that we have a good supply of the SAC caps and pins at National Office? It would be good to have them a sellout item too.

Meeting With Transport Canada

Ian Oldaker, Chairman of the Flight Training and Safety committee, met with a number of Transport Canada officials on 10 January to discuss, in particular, motorglider pilot licencing.

AIRWORTHINESS It was noted that about ten "motorgliders" are now registered in Canada as aeroplanes. This might create a legal problem later; for example, following an accident to a "glider pilot", unless a new definition is devised to describe them. TC prefer to keep the present name of motorglider and to have a definition at the start of the new regulations to properly define them. This should allow type approvals under JAR 22 rather than FAR 23 and removal of the above legal shortcoming. The amendment No. 3 to JAR 22 is out for comment and TC urgently require our input. Ian advised the SAC Directors that we still have time but we need to get the Association's view to TC as soon as possible.

PILOT LICENCING Much discussion took place! Transport Canada have not drafted any requirements to date and asked for our input. There is a concern among TC staff that when a "glider pilot" gets a motor, he will be flying into all sorts of airports: and they are concerned about his skill at conforming to procedures such as circuits and air traffic control requirements.

There are a number of options:

- GPL plus log book endorsement, eg. for self-launching method.
- GPL plus motorglider class rating,
- PPL restricted to motorgliders.

The last gets around the legality of definitions but, presumably, would involve TC to a large extent. The second is very attractive if we can get a new definition to describe powered gliders that now fit into the JAR 22 requirements. This would also involve TC in issuing the ratings. The first is also a possibility, so that we can use the present specification of launch method in the pilot's log book. For this way of operating, however, the TC people feel that we need to think carefully about whether the pilot would need to be restricted (compared to the PPL pilot) in any way.

Ian then reported that he had suggested to the TC people that the SAC come up with their suggested scheme for licensing pilots for self-launching and other powered gliders and to make the recommendations to TC in due course. This was agreed by TC and they asked for these within about three months. Ian noted that our proposals should include instructor requirements, etc.

Ian assumed that the SAC by-law respecting making recommendations on pilot licencing, etc. would mean we would have to obtain the approval of the upcoming AGM before the SAC proposal is submitted to TC. This was confirmed.

SOARING INSTRUCTOR'S GUIDE

Copies had been sent out to TC in the fall for their comment. Ian reported that Bruce Carter commented, in general terms, that he would very much like to see our manual follow the TC manuals; in particular, he mentioned their Flight Instructor Guide. Ian received TC's detailed comments but had not had time to review them. He reported to the directors that he felt, in view of the latest TC response, the production of the new SAC Soaring Instructor's Guide must go through one more iteration before publication. The director concurred with this approach. □

COMING EVENTS

May 17-19, **Innisfail May meet**, hosted by Cu Nim Gliding Club. Contact: Kevin Bennett (403) 256-3665 (H), 263-0143 (W).

Jun 8-15, **Chipman XC Clinic**, 2nd annual week long cross-country course for beginners (see 1/86, page 11). Course conductor, John Firth. Contact: Mike Apps (403) 436-9003 (H), 435-7305 (W). Course limited to about 18 persons, so reserve a space soon.

Jun 15-21, **Eastern Instructors School**, hosted by Montreal Soaring Council. Contact National Office for details.

Jun 15-21, **1st French Language Instructors School**, hosted by Club de Vol à Voile de Québec. Course director, Denis Gauvin, (418) 842-6456 (H), 647-6750 (W).

June 28 - Jul 1 (practice Jun 21-27), **Ontario Provincial Contest**, handicapped scoring. Rideau Valley Soaring School, Kars, Ont. (20 miles south of Ottawa). Box 1164, Manotick, Ont. K0A 2N0 (613) 692-3622. Celebrating 10th anniversary of RVSS. Glenn Lockhard.

Jul 12-18, **Western Instructors School**, hosted by Edmonton Soaring Club. Contact: Al Sunley (403) 464-7948 (H), 463-2619 (W). Details to follow.

Jul 22-31, **Canadian National Gliding Championship**, York Soaring, Arthur, Ont. Details to follow.

Jul 26-Aug 4, **Cowley Summer Camp**, sponsored by Alberta Soaring Council. Contact: Kevin Bennett (403) 256-3665 (H), 263-0143 (W). Canada's biggest and best soaring gathering for fun and badges, campground facilities. XC clinic also.

Grand Canyon video ad

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