

# free flight • vol libre

2/91  
Apr-May

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# POTPOURRI

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The SAC Board of Directors elect the President, Vice President and Treasurer annually just after the annual general meeting, and although I've only served as your President for one year I decided to let someone else do it.

I enjoyed my term as President — most of the time. The contact that I've had with our members has been most rewarding. The workload was high, as expected, although the time and energy needed for some issues seemed excessive.

I'd like to acknowledge the volunteer assistance Jim McCollum has given SAC. What Jim does for the office in Ottawa goes mostly unnoticed, but we all benefit from it.

After four years of unending enthusiasm, Nancy Nault, our Executive Secretary, has left us for a position with an Ottawa school board. Nancy was always cheerful with the members. I communicated with her by phone or fax about twice a week and always found her helpful. She will be missed by all of us. Joan McCagg has joined us as our new Executive Secretary. We welcome her to our association.

Richard Longhurst of the Air Sailing Club is our new Insurance committee chairman and Charles Yeates of the Bluenose Soaring Club is our new Sporting committee chairman. Thank you both for taking on these tasks.

*Alan Sunley*

I'll still be a Director-at-Large, and am now chairman of the Technical committee to give Herb Lach some help.

*Chris Eaves*

As your new President I have the unenviable task of trying to maintain the high quality of this column as established by your previous presidents. I personally wish to thank Chris for the many, many hours and good work that he performed during the very trying year and contentious issues that arose.

We wish to welcome the two new directors — George Dunbar as Director-at-Large and Pierre Pépin as Quebec Zone Director — to our Board and to extend our greatest appreciation to the outgoing directors Gordon Bruce and Alex Krieger for their excellent and considerable service to the Board.

As always and it must be re-emphasized again and again, SAFETY is our most important issue. Four fatalities in one year is a terrible price to pay to have the enjoyment of our sport. Each of us has to form the habit of critically watching our operation and spotting those situations which could lead to an accident and informing club officials and others of our concerns.

Our next most important issue is our insurance scheme. It is a GROUP policy and depends on as large a base of members as possible to keep the rates lower; it cannot withstand the exodus of members looking for lower premiums from other sources. The clubs with their training mandate cannot possibly obtain a lower premium for the same coverage on an individual basis.

At the present time we appear to be faced with two problems:

One — How to persuade, induce or otherwise deter those private members seeking lower premiums from abandoning our scheme and thus eventually causing higher premiums for everyone.

Two — How to change our policy to allow reduced coverage for those wanting lower premiums and yet still have the full coverage for the clubs and others desiring it and have it all available in a group policy. These issues must be addressed in the coming year and a resolution obtained. Your inputs are requested, please communicate with your Zone Director.

Thank you, and I wish all of you a pleasant and SAFE soaring season.

# free flight • vol libre

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2/91 Apr–May

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

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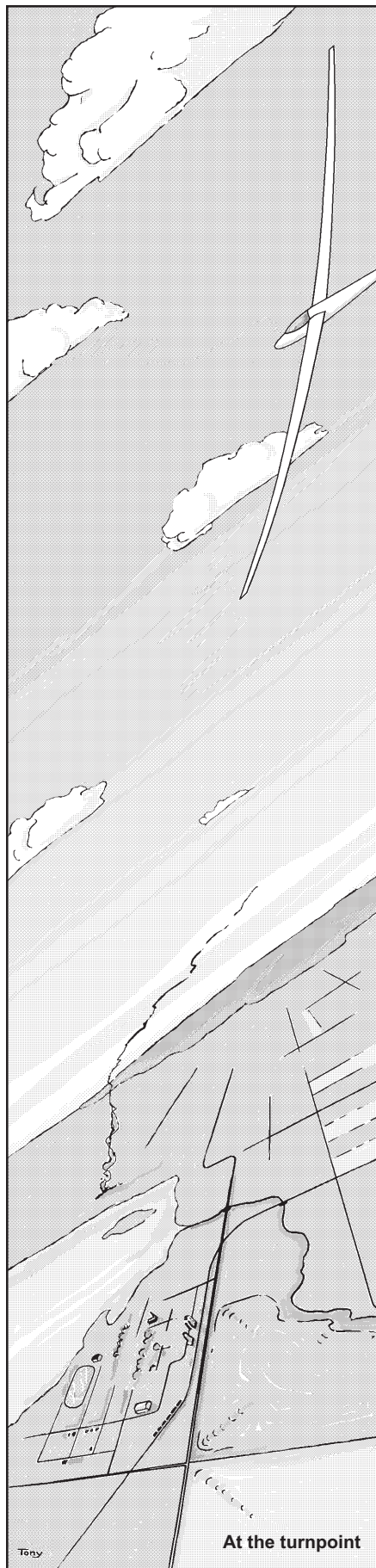
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## Cover

Charlie Yeates, a Bluenose member, cross-country pilot for many years, and now the new SAC Sporting committee chairman, straps on a DG-200 during a recent Australian soaring holiday.



# THE PEOPLE PYRAMID

## THE SPORTING BASE OF THE AVIATION INDUSTRY

Position paper of the FAI to the International Civil Aviation Organization

presented by **André Dumas**

President d'Honneur, FAI

to the delegates of the ICAO Conference, Montreal, 1989

Monsieur le Président and delegates:

It is my honour and pleasure to be with you on this occasion. Having served as President of the Fédération Aéronautique Internationale (FAI) a few years back, it is with great pride, Monsieur le Président and delegates, that I address this conference representing the FAI and its current president, General Cliff von Kann, who sends his greetings and regrets as he is presently in Varna, Bulgaria, presiding over the 82nd General Conference of the FAI.

Let me first congratulate ICAO on the 45th anniversary of the Chicago Convention which is only a few weeks away. It is a wonderful paradox of history, that exactly three years after the start of World War II a document that would contribute so much to world peace was completed at that convention.

FAI was delighted to see ICAO come into being. Since 1905, the FAI had been the only major international aviation organization which had been devoted to international peace through friendly competition in the skies. It has served as an Observer at ICAO since 1947, the year when the 26 nations ratified the Chicago Convention, thus bringing it into force. Now, as FAI approaches its 85th birthday, it embraces national aviation associations in 80 countries. Our members represent aeronautics in various types, such as general aviation, gliding, parachuting, home building, ballooning, hang gliding, aerobatics and aeromodelling; all of these need space in the sky in which to operate. May I also say, ladies and gentlemen, that many of these members become the instructors at the flying clubs and schools and later become the pilots and crews of the commercial airlines of the world. Through its organization of world championships the various air sports, and its responsibility of homologation of world air and space records, FAI has brought the aviators of the world together and helped the cause of world peace.

In this and many other ways ICAO and FAI have common interests and goals. Some are more obvious than others. We are all very much aware of the importance of safety and security at airports and in the sky. In Air Traffic Control (ATC) however, I believe that we should be closer together than we are. This is vitally important to FAI because of ICAO's dominant role in ATC planning.

Now, it is recognized that in ATC different aeronautical activities will need different kinds of regulation. Unfortunately, rules that help some types may hinder others. As the airways and airports grow more crowded, the tendency of governments has been to place more airspace under positive control — assuming, as they do, that positive control and safety go hand in hand. The result is that it is becoming more difficult and more expensive for the private pilot to fly his plane. So light aviation is being forced out of the skies and out of the system.



### 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 Aero Club of Canada (ACC), 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 ACC 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.

**free flight** is the official journal of SAC.

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

**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 whose name and address is given in the magazine.

All material is subject to editing to the space requirements and the quality standards of the magazine.

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

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**5** January, March  
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## L'ASSOCIATION CANADIENNE DE VOL À VOILE

est une organisation à but non lucratif formée de personnes enthousiastes cherchant à développer et à promouvoir le vol à voile sous toutes ses formes sur une base nationale et internationale.

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

**vol libre** est le journal officiel de l'ACVV.

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

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

L'exactitude des articles publiés est la responsabilité des auteurs et ne saurait en aucun cas engager celle de la revue **vol libre**, ni celle de l'ACVV ni refléter leurs idées. Toute correspondance faisant l'objet d'un sujet personnel devra être adressé au directeur régional de l'ACVV dont le nom apparaît dans la revue.

Les textes et les photos seront soumis à la rédaction et, dépendant de leur intérêt, seront insérés dans la revue.

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

Pour changements d'adresse et abonnements aux non membres de l'ACVV (\$20 par an, EU\$22 dans les Etats Unis, et EU\$28 outre-mer) veuillez contacter le bureau national.

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Now we are witnessing a worldwide decline in pilot starts and a scramble among virtually all airlines of the world to recruit enough pilots to maintain airline schedules. Let me offer a few examples of what I mean:

- The flight experience of new hired pilots of major airlines is on the decline.
- The majority of new hired pilots are ex-military, which means that the problem is being shifted to the military.
- The turnover rate of pilots of some small carriers averages 60% a year and in some cases exceeds 100%.
- Trainees hired "off the street" and without a proven interest in aviation have high attrition rates.

What governments are ignoring in this drive for more and more positive control is the fact that light aviation is the principal producer, not only of pilots to fly the airlines, but of mechanics, technicians, controllers, aeronautical engineers, aviation executives, aerospace scientists, astronauts and cosmonauts. Most of these people started out as air sport or small plane people — often aeromodellers and air cadets, but in all cases, people who loved aviation and were willing to make sacrifices to be part of aviation. This was, and must always be, the base of the aerospace "people pyramid". This is best exemplified by what has happened with the thousands of aero-clubs that form the "people base" of FAI.

But this type of person offers something else — high motivation at minimum cost. In countries where there are thriving aeroclubs and where these are used as a source of commercial and business pilots, attrition is low because the products of the aeroclubs have proved their interest, desire and skills. When commercial pilots are hired "off the street", the attrition rate is much higher — and so are the training costs. Moreover, those sporting aviation pilots who have entered competition bring another bonus to their airline work — the ability to fly under pressure. As an example: the FAI Airmanship Award was presented a few years ago to the pilots of a well known international airline for their skill of landing a 767 that had lost both engines. Both these pilots were qualified glider pilots. It is no coincidence that in every branch of sport aviation, in every country, large numbers of active airline pilots continue to enthusiastically pursue the disciplines in which they first achieved their flying skills.

Now my point is that it would be a terrible and tragic mistake to continue to reduce the airspace available to general and sport aviation. The result can only be that commercial aviation will run out of people, and the efforts of governments to protect this element of aviation will lead to its breakdown. More serious, the ground based system of ATC with ever-increasing positive control of airspace does not prevent airborne accidents and near misses. Humans are not perfect; and the perfect system of automation has yet to be designed. And what happens when all airspace comes under positive control?

At the same time the technology exists, or can soon exist, to put more of the responsibility for aircraft separation into the cockpit. "See and be seen" may no longer be feasible with the human eye, but it can be achieved electronically. With this approach there is no reason why we cannot devise a system that provides for light aviation and commercial aviation to coexist safely.

In short, FAI strongly believes that safe coexistence rather than ever-increasing ground based positive control is the right answer, and the only answer to maintaining a balanced "people pyramid" for the world aerospace establishment.

Since ICAO is the long range planner for the world's airspace, FAI urges that ICAO take the lead in exploring the technological options for achieving a system, whereby all elements of aviation can safely enjoy the use of the skies. This would bring aviation to its full potential to serve mankind and the cause of peace.

Monsieur le Président and delegates, I thank you for the honour of sharing this platform. FAI regards Dr. Assad Kotaite as a good friend and appreciates the support of the Council and you as its members. Our best wishes for a successful conference. •



# IS THERE LIFE AFTER SOARING?

## Gren Seibels

from Soaring Pilot

SOME WHO ARE NOW ENJOYING what I prefer to call the "late middle years" may already have experienced intimations of mortality, in the form of a painful question, namely: How much longer will I be able to fly? It does seem grossly unfair that just as we are encountering our first twinges of arthritis, shortness of breath and a waistline that suggests advanced pregnancy, we must also contemplate the dreary prospect — sooner or later — of renouncing the only matters of life that are meaningful. (If you think there are other matters in life as important as soaring, you're probably too young to be reading this, Bug off, kid!)

To establish my own credentials, let it be recorded that when I reached my mid 60's, I took the cold turkey route: furling my silk scarf, hung up my goggles, sold my ship ... and started quietly decomposing.

For public consumption, I explained that I reached my decision by altruism; or, more specifically, out of consideration for Trudy, who had loyally handled search and rescue operations for me during two decades of persistent mishaps. After all those years of letting optimism overpower judgment, it was clearer than ever that every time I took a tow, Trudy would have increasing grounds for concern. Coining a clever phrase, I told myself, "Enough is enough." Give Trudy a break.

Privately, I recognized that my rising experience curve had long since intersected my descending ability curve; in the years to come, things were unlikely to improve. Oh sure, I could still fly well enough to be safe, and after all those jillions of landouts, I had finally begun to perceive that (1) the next thermal wouldn't necessarily be dead ahead; and (2) airports are better than pastures. But I quailed at the possibility of discovering, the hard way, that my once trusty reflexes had gradually atrophied into a state of uselessness. Better, I reasoned, not to draw down my luck account any further; I'd had my share of fun and games.

Besides, the allure of being consistently trounced in contests by fuzzy-faced whippersnappers a third my age had begun to pall. I enjoyed being pals with many of the top guns in the sport — although in moments of unvarnished candor, I admitted to myself that the warmth of these relationships was at least partly stoked by the fact that to them, I posed no threat whatever in the scorer's computer.

My ability to fly one brilliant leg on any speed triangle somehow offset the disasters that normally characterized the rest of those "flights". I was becoming all too familiar with the asterisk on the scoresheet denoting "miles flown". While soaring is renowned for its independence of non-renewable resources, I re-alized I was forcing my crew to squander unconscionable quantities of fossil fuel, retrieving. For a soaring pilot, I was an ecological disaster.

Toward the end of my career, the fun days barely outnumbered the letdowns. For every thermal neatly centered, milked of 5,000 feet and triumphantly exited, there were a dozen nasty little scenes of meteorological chaos wherein every 20 feet of up cost 40 feet of down, which I would doggedly explore until better pilots flew past me with a quick zoom,

heading for more promising skies. Or worse, when those same superior types had found the real stuff and were disappearing into the stratosphere, all too often I would come trailing in a thousand feet or so below them, and flounder around until I realized only scraps were left from that table.

Despite these minor drawbacks, the side benefits far outweighed the negatives. With remarkably few exceptions, soaring attracts the nicest people in the world; and even those who aren't very nice are usually interesting. Over the years, we have chased a variety of avocations, but nowhere have we gained so many worthwhile, steadfast friends as in soaring. From time to time, when the sundown telephone bourbon starts flowing, we are prone to check in with them; somehow, emotion tends to surface.

Memories of contests; of informal cross countries; of tasks rained out, thus making a day for fettleing and hobnobbing and liar's dice and war stories — a golden treasury of reminiscence. But as with wine, good food and sex, while memories of soaring may be better than nothing, they don't hold a candle to the

continued on page 16



# PRAIRIE ADVENTURE

## Mike Maskell

Winnipeg Gliding Club

“WINNIPEG TERMINAL, sailplane Charlie Gulf Victor Lima India.”

“Victor Lima India, Winnipeg Terminal, go ahead.”

“Good afternoon sir, we are presently climbing through 9500 feet in the Glider Activity Area at Starbuck and are requesting that the Ceiling Approved (CAP) height be raised to 12,000 feet.”

“Roger, Lima India, we’ll show Starbuck active 12,000 feet and down.”

“Thank you sir, Lima India, out.”

With that brief exchange my wife Susan and I headed up into the sky, carried aloft by the strong prairie thermals that were marked by a cu-laden sky generated by the black soil far below. The weekend started out with the promise of superb flying, as a cold front had passed through the night before cooling off the upper layers of air. Saturday had seen thermals extending up to and probably above 11,000 feet ASL. We had flown the club’s 2-33 as high as 9000 and had gone on a short excursion to a small farming community some 20 km away. After a couple hours of touring the countryside my kidneys were telling me that it was time to go back to the field. After a pit stop and some nourishment the club’s Jantar became available and since I had yet to fly it, I took the time to get a thorough briefing from the qualified check pilot. Knowing that conditions were still excellent I decided that I might try a short cross-country and declared my intentions.

Excellent may be an understatement as I was soon climbing through 11,000 feet. From this vantage point I could clearly make out the town of Carman some 50 km to the south-west and in no time at all I was overhead with still plenty of height to make it home in a final glide if I had to. A thermal over the main street offered to take me to cloudbase once again and with this reserve of height I made a quick run back to Starbuck. Over supper that night Susan and I made plans for the next day. Would it be as good as today? Better? We turned in for the night early and arose in the morning to brilliant sunshine and light winds. My instinct told me that this day would be another boomer. After breakfast we went to the hangar to DI the club’s Lark, C-GVLI and prepared the barograph for the flight that lay ahead. Our plan would be to set an (as of then) unclaimed Manitoba multi-place height gain record. As anything would do for a record we wanted to be sure that it would look respectable on the record books and would be difficult to beat in the future. Also, if the day was really strong I had hoped to take Susan to Carman and show her some of what cross-country flying was all about. Susan at that time was only a few flights shy of receiving her own glider pilot licence and this early exposure to flying away from home would help to bolster her confidence when the time came for her to set out.

By noon hour the first reports of weak lift were beginning to be heard on the radio and we quickly pushed into line for the towplane. There was considerable activity at the flight line that day and we waited almost an hour for our turn to come up. By now the sky was beginning to fill with well developed cumulus and the CAP height was up to 8000 feet. On the tow we found a moderate amount of turbulence and at 1700 feet AGL we released in a thermal. Slowly we began to climb but just as soon as we gained a few hundred feet we lost our thermal. For a while I fought to find it again, all the while having to endure some snide remarks from Susan in the front seat about my thermalling abilities and the possibility of a relight. Slowly I made my way back into the core and found strong smooth lift that quickly carried us up to the CAP height. A delay with ATC in Winnipeg had us hold at 8000 feet but in a few short minutes we were granted a height of 10,000 ASL. It is not too often that one sees the small hand of the altimeter wind up off its usual spot, so this was a milestone for us. By now the thermal was peaking at 8-10 knots of solid, smooth lift and we had to act quickly to activate the Glider Activity Area to a higher CAP altitude. With the cloudbase well above us we requested the maximum allowed height of 12,000 feet and soon found the lift topping out at just over 11,000 feet.

“Fantastic”. This was the only sound I had heard from the front seat in some 15 minutes since all of Sue’s ribbing earlier on in the flight. Indeed it was fantastic and from up here we could once again see clearly in all directions for over 50 km. Carman appeared so close that we thought we were right over it. It seems that perspective changes from this altitude and we were deceived by the actual distance. We set off, reaching Carman with plenty of height to spare and played around some before heading straight north to the community that we had flown over the day before. At Elm Creek we met up with Larry Morrow in the Club Jantar. Together we flew for a while

with Larry leading us further west to explore the area.

We were soon joined by another sailplane. This time a privately owned 1-26 flown by Brian Henderson met us to share the day. Together the three of us flew around the area marking thermals for each other and generally enjoying the afternoon. By this time the flight had lasted around two hours and I was beginning to feel the need for another pit stop. As we had lots of altitude to make it back to the field with a comfortable margin, I turned the Lark and headed in an easterly direction towards the club. The Lark is a very good aircraft and with negative flap on, it will accelerate quickly and has a very solid feel to it. I pushed the speed up towards 100 knots and within what seemed like minutes were back home. Losing a bit more height brought us back to circuit altitude and an almost perfect flight had come to an end.

After storing the Lark in the hangar and putting all the equipment away, we unwrapped the barograph and took a look at the trace. The barograph had recorded the entire flight as it was supposed to and on initial inspection showed that we had reached a high point of over 11,000 feet with what appeared to be a height gain of somewhere around 8500 feet. Not too bad for a day’s flying.

It would be some time later that the official records would show that our absolute altitude would be 10,800 feet and our gain of height would stand at 8500 feet. Thus we had established a Manitoba multiplace altitude record (rather easy as no record had been claimed before us!). Indeed, the day had proved to be a real boomer and we were pleased with our results. Susan was impressed with the capabilities of the Lark and how easy it was on a good day to go cross-country. We are now planning for 1991 and with the spring rapidly approaching it will not be too long before we are once again soaring over the Manitoba prairies. •

# LEARNING THE ROPES – part 2

## Tillmann Steckner

London Soaring

THE FINAL PART OF THIS ARTICLE concludes with the procedure used to assemble the towrope ends using standard twisted rope (refer to the diagram given in Part 1), and with some more technical information I have found.

### Procedure for triple-twisted towropes

1 Regardless whether the triple-twisted rope is 1/4" or 5/16", the diameter of the Tygon material for the sleeve and loop hoses is the same as before, ie. 1/2" OD and 3/8" ID. However, the ends of each of the rope's three main strands should first be prepared as shown in Figure F. The reason for this is that we must avoid any unnecessary bulges at the end of the rope splice if we are to be able to pull the sleeve hose over it later on.

2 Rewind the three untwisted rope ends seen in Figure F to once again form a tight helix.

3 Slip the sleeve hose and the loop hose onto the rope as outlined in steps 3 and 4 for hollow braided rope in Part 1. If need be, lubricate the rope with water. (The backstop seal is omitted on twisted ropes because the three splice endings sticking out of the side of the rope make it very difficult to install one.)

Other than the splicing, the remainder of the procedure is generally the same as was described before. However, in the present case the splice should only be slightly longer than the length of the sleeve hose. After the split ends of the sleeve hose have been pushed all the way into the loop hose, do not only tape the hose joint, but also the lower end of the sleeve hose in order to substitute for the backstop seal. Produce a firm and gradual taper about 4" (10 cm) long, covering equally the sleeve hose and the rope exiting from it.

When 1/4" twisted rope is used, nip off the three fused strand endings sticking out at the end of the splice. Ideally the

end of the splice is so close to the end of the sleeve hose, it can be hidden under the taping previously referred to.

The eventual failure of twisted type towropes equipped with Tygon-shielding frequently occurs as a result of the untwisting and the attendant distortion of the rope helix. Ironically this is more of a problem with the modified tow-ropes than it is with those featuring regular endings simply because their longer service life gives this condition more time to develop. The problem is overcome by wrapping the towrope with adhesive cotton tape at 8–10" intervals (20–30 cm) for a length of roughly 23 feet (7 m) from the ends as illustrated in Figure G.

### Rope testing

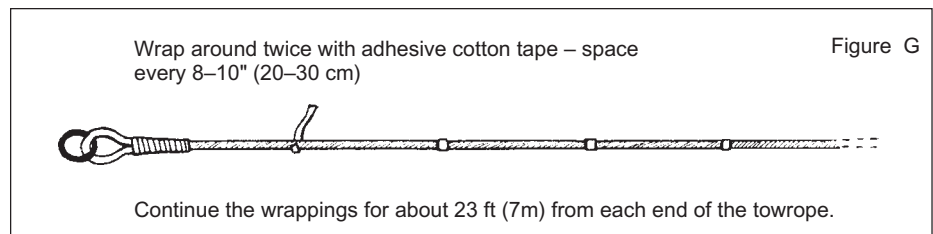
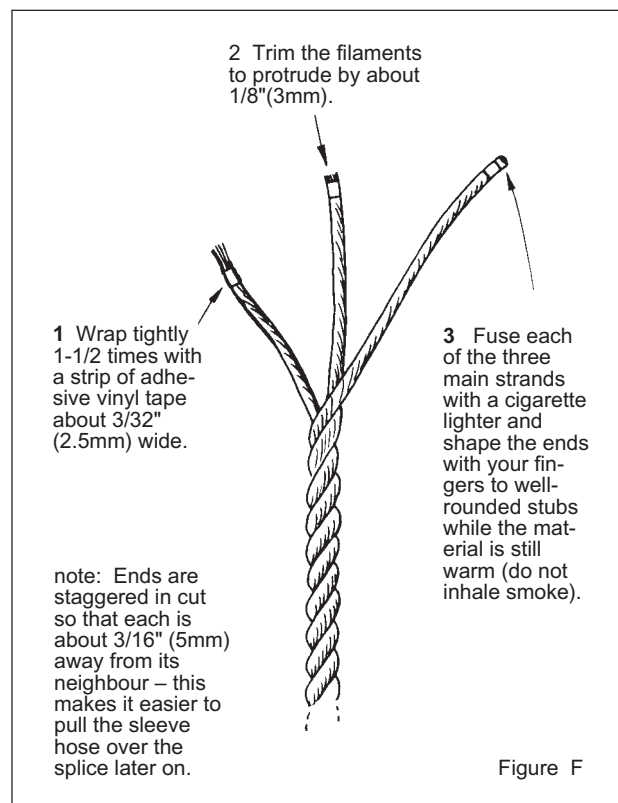
Originally I intended to check the manufacturers' claims of the tensile strength of their product. I also was eager to find out how aging and fatigue affects the strength of the rope. Unfortunately the engi-

neering lab which agreed to carry out these tests for free flight, discovered that their equipment, normally used to check the tensile strength of relatively inelastic materials such as steel and aluminum, was found to have insufficient travel to test highly elastic rope made of synthetic fibres. Although I had subsequently contemplated setting up my own test rig for this purpose, I was finally dissuaded by two considerations. First, as alluded to earlier, the manufacturers' specifications are likely on the conservative side for reasons of product liability. Second, given the peculiar property of synthetic fibres to "flow" under sustained heavy loads, any such tests are of little practical value to us, unless they are conducted under the same stringent conditions followed by industry. I think here primarily of the length of time during which the test load is applied. It makes a great deal of difference, whether this is done over short periods of time (eg. under 2 minutes) or over, say, the time it takes to take a sailplane up to 2000 feet.

Before closing this article, I should relate two mishaps involving the use of towropes.

In the first case a glider pilot actually managed to pick up a towrope lying in the grass with one of his wings while taking off. Although the pilot immediately realized there was something badly amiss, he could not explain what actually caused the unusual flight behaviour of his ship. After he was advised of the problem over the radio by an alert ground crew, he released and tried to shake off the offending rope. With this he did not succeed because the rope had got snared on a tie-down eyelet left inadvertently in the wing tip. He was forced to land with the rope still dangling from his ship. Since there were many trees along the final approach, the situation could have had serious consequences, especially if the pilot had not received the aforementioned radio message. In light of this occurrence, we would be well advised to adopt the method of storing towropes in plastic garbage barrels as described in the first part of this article in the previous issue.

In the second case I walked away from an ASW-24 just as it was about to commence the takeoff run. When I heard a strange noise, I turned around and discovered that the wheel of the glider had overrun the towrope. Because the pilot had fully applied the air and wheel brakes and the towplane was still pulling forward, the towrope, while coiled loosely behind the wheel, was under considerable tension ahead of it. Instinctively I walked towards the glider to help setting things right. At this very point the pilot released more or less simultaneously both the brakes and the towrope, thereby causing the latter to shoot out from under the spinning wheel like a sling-shot. Needless to say, if the Tost ring would have hit me it could have caused serious injury. The lesson of this story is to never approach a sailplane ready for takeoff from an area ahead of the wings. It is also unwise to act "instinctively".





## DISTRACTION & BROKEN BONES

**George Szukala**, Cold Lake CFI  
from CLSC Newsletter

Last weekend (Sep 22) I had the opportunity to go down and partake of some soaring at California City just outside Edwards AFB. While I was there I managed to take in an accident.

As a licensed pilot, you already know the importance of daily inspections (DIs) and pre-takeoff checks or cockpit checks. As a student, you will constantly hear your instructors harp on these checks and why they must be completed thoroughly, without exception.

Now, on with the story. A local member of one of the clubs at Cal City recently purchased an ASW-12 and was in the process of rigging his new baby when the Canadians (us) arrived at the field. I went off to scrounge a sailplane to fly and after a half hour was ready to go and so was our friend in the ASW-12. We launched first and when I returned from my flight, my friends walked over to direct my attention to a greenhouse near the runway. There, against the side of the building and on the roof, lay the remains of the ASW-12.

Here's what happened. While the pilot was rigging the aircraft, some nosy tourists walked over to snoop and chat. The pilot began to explain at length how gliders fly and stay up. After the visitors left, he was in a bit of a rush to get airborne so the glider was pushed to the launch point and the pilot got in. The towplane landed and the rope was hooked up.

The events which follow were witnessed by my fellow Canadians who stood by and watched the takeoff of the ASW-12. The aircraft got airborne immediately and pitched up to an 80 degree nose up attitude, similar to a winch launch. This continued up to approximately 200 feet when the back release took over and released the glider. The sailplane drifted off in a right turn, nose down and impacted the greenhouse. Yes, the pilot is alive, but he's got two broken legs, one quite serious, and other minor injuries.

Now we cut to the reasons. When the pilot was rigging and the tourists came over, he forgot to connect the elevator. When they left, he forgot to give the glider a complete check (which always includes a positive control check) prior to pushing onto the flight line. So there you have it — a seriously injured pilot and a destroyed sailplane. A shame too because the ASW-12 is a really hot ship.

The moral of this story is simple. Always perform a complete DI. If you are called away for some reason, start the DI again from the beginning — besides, the practise will be good for you. Next, always perform a pre-takeoff check which includes the controls as the first

point of the check. After all, if you can't control the glider, then it's not a glider anymore — it's a rock — and you sir, are a helpless passenger. Finally, never rush any checks or inspections as this fosters an improper frame of mind. Take the time that's required to do the job correctly. When I was undergoing helicopter flight training, one of my instructors used to say: "If you fly long enough, sooner or later you may have an accident. So why be in a hurry to get there."

Oh yes, the soaring was magnificent. •

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## NEW VIDEO OUT

**Ian Oldaker**, Flight Training & Safety

There is a new video out on aircraft surface contamination. As a result of the inquiry into the Dryden AirOntario crash, amendments are being made to the Air Regulations and Air Navigation Orders. The amendments to the Air Regs prohibit the starting of a flight when any snow, ice, frost, etc. are adhering to any critical surface of the aircraft. This means that the aircraft must be inspected prior to flight, and the regs compel any crew member to report their observation to the pilot-in-command. (The preceding wording is basically by Transport Canada — in the case of pilots in our clubs they should be taken to include any observing pilot — and the pilot-in-command must then inspect his aircraft's wings.)

A mandatory education program is being implemented for air carriers, and we are being encouraged to participate in order to increase awareness and the level of safety in operations involving the possibility of the wings being contaminated by snow, frost, and so on.

The video by Transport Canada is held by the National Office for any club to book for a short time. It comes with two booklets, one for large and small aircraft, the other for ground crew. The booklets and video describe how to clean the aircraft and particularly how to do an adequate pre-flight inspection. While the program is aimed at scheduled operators, and commercial and other power pilots, there are obvious applications involving gliders and towplanes, especially during spring and fall flying. Who hasn't flown with snow on the runway and who hasn't had to clean frost off the wings before flying?

I thoroughly recommend this video for a winter meeting of your club, so feel free to ask Joan to send the video and booklets to you — just don't keep them longer than needed so that the next club may get them for their scheduled meeting! •

## ENERGY ABSORBING FOAM

**Tony Burton**

You all know that you shouldn't use soft foam cushions to shim yourself into a comfortable fit in the cockpit, don't you. You've heard how a hard arrival can crush one's vertebrae because the compressed cushion has stored energy and starts feeding it back to your butt about the same time the seat hits it? For your own health, never sit on a cushion which has a filler that can bounce.

On the other hand, you may be big enough that you don't need cushions at all, but the seat was designed by a Spanish Inquisitor. Or, if the seat geometry is almost alright, how many times have you found yourself squirming around after two hours because a slight pressure point on your cheeks or tailbone is getting mildly excruciating?

Ulli Werneburg was exhibiting an energy absorbing, conformable foam called Confor™ at the SAC AGM, and it may be the answer to a Blanik instructor's prayers. It looks like ordinary foam but acts like putty, deforming under the pressure of a finger tip, for example, but only slowly returning to its original shape after release. It's now used extensively in situations where people have to sit a long time, such as truck seats, wheelchairs, etc, since the material deforms so as to equalize the pressure over the bearing surface. It is advertised as being capable of absorbing 97% of the energy applied to it and ought to be useful in hard landings or worse. It looks like a product that deserves some investigation from clubs and private owners. Call Ulli for more details at (613) 523-2581. •

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## DISCIPLINE

**Bob Kurzwernhart**, SOSA CFI

Discipline is a word that seems to have been given a twisted meaning over time. It is usually thought of now as disagreeable, restricting, and oppressive. In reality, it may be looked at as just the opposite — since discipline provides guidelines for acceptable conduct, not restrictions.

The pilot who has not disciplined himself to operate his aircraft within the confines of Air Regulations and local club procedures lives a rather miserable existence. He is always afraid of attracting the attention of safety conscious individuals, and finds it necessary to dream up excuses for unacceptable performance and an attitude problem. He is an unhappy man.

Good safety is based upon good discipline, and cannot be achieved without it. Sloppiness in thought or deed has no place anywhere near an aircraft. If you think about the proper meaning of discipline, it will support your activities. Teach it to our young (and not so young) pilots by your example. They will thank you some day. •

# It takes judgement, brains, and maturity

... A power pilot learns about gliding

## King Povenmire

Arizona Soaring Association "Air Currents"

SOMEONE ONCE SAID that a good pilot is one who uses his highly developed judgement to keep from having to use his highly developed skill. After 5000 hours of flying and instructing in airplanes I expected that my judgement might have developed to the point that I could keep out of trouble in gliders. As I began soaring, I was impressed with how simple everything seemed. A person could solo a glider at 14 — two years earlier than a power plane. The trainer had no radio and only five instruments — two of which were variometers. The spoilers acted a little like the throttle on final, and provided quite a bit of glidepath control. Yet I knew there were bears in the woods. Regardless of how good the day is, the last maneuver on any flight would be called an "Emergency Landing" by a power pilot.

Several things were in my favour. I had a good understanding of how airplanes fly. I understood weather systems from an instrument pilot's point of view. As a university faculty member, I have been involved in a serious study of causes of pilot judgement errors, and have developed procedures for teaching judgement to flight students.

People tend to act as if judgement is an unchangeable element of personality. We are heavily ego-involved with our decisions. We used to say, "You can't teach judgement." We have learned a lot about teaching and a lot about judgement since then. Judgement is something that we continuously learn. We learned when it was safe to cross the street, what not to say at the dinner table, when to ask dad for money, and when not to fly.

Until recently, the FAA believed that by establishing knowledge, experience and skill requirements for a pilot certificate, that judgement would automatically develop in the process. This is true to the extent of the student's experience. However, learning pilot judgement can be enhanced. Students should have as many opportunities as possible to exercise their judgement in training situations. Instead, they are told exactly what to do even on solo flights. Very little experience is gained on dual flights were the instructor makes all the decisions. The first thought that comes to a solo student in a situation requiring a decision is, "I wished my instructor were here."

The FAA has recently sponsored research on the teaching of pilot judgement. The book "Judgement Training Manual for Glider Pilots" by Tom Knauff and Doris Grove is based on this work. Five ego-related thought processes or motivations are identified as leading people into making bad decisions. They are anti-authority, impulsivity, invulnerability, macho, and resignation. This book relates each of these to glider flying, and gives some suggestions on avoiding them.

"Judgement comes from experience. Experience comes from bad judgement."

I once saw these definitions on a sign in a pilot lounge. "Judgement comes from experience. Experience comes from bad judgement." It is true that judgement comes from experience. Yet if we can't learn from other experiences, we will really be hurting. We will have to "experience" all the possible pitfalls on our own. Even assuming that we are in control of the ego factors mentioned above, the main problem in decision making is that we never have all the information. Experienced pilots know where to look for the pertinent information that is available, but inexperienced pilots don't know what is pertinent.

If allowed, the 14 year old student pilot will learn to make decisions during his dual flights. Sometimes the instructor may point out that a decision is necessary, but the student should have the opportunity to make it. To the extent possible, the decision should be allowed to stand so that the result can be determined. Critiquing judgement can be made more acceptable by using the format, "That was a good decision based on the data that you considered. However, let me show you some additional data." This puts the critique on data gathering ability were it belongs rather than on judgement.

My glider instructor let me gain experience on dual flights. He let me decide, then added

new data. He had some rules of thumb. (The numbers kept changing.) As I turned toward a promising looking cumulus, he would wait until I had squandered several hundred feet without seeming any closer, then he would say, "Rule number six is clouds are always further away than they look." "Rule number two is when you get down to 1000 feet you should be committed to land." After two circles where we lost nearly 1000 feet he said, "Rule number five is never circle in sink." One day while I was pre-occupied with something other than my position relative to the airport, he let me wander about until the airport was way up by the horizon before saying, "Rule number one is that we always try to stay within gliding distance of the airport." To a Cessna 150 pilot, the angle looked like certain death.

I am not yet an experienced glider pilot. Although I have had "Glider" added to my commercial and instructor certificates, and have completed the duration and altitude legs for my Silver badge, I have less than sixty flights. In that short time I have had several "experiences" (see definition above). One time I ran into vicious sink on base leg and just barely made it over the trees to the airport using exceptional amounts of skill, feel, and adrenaline. More than once I have needed a thermal to get back to the airport, each time from a different set of circumstances. In such cases, my judgement failed to keep me out of a bad situation. However, my aviation sense developed over the years helped me define the situation as early as I did, and come up with a plan of action.

As I have learned from first-hand experience, on any solo flight a student pilot may meet a set of circumstances different from anything encountered in training. How do new pilots develop guidelines for making decisions? Unless they have had practise making decisions, and recognizing when decisions need to be made, they may waste time in critical situations learning to do that. They may muddle through, but they may take too much time muddling.

I'm looking forward to learning other lessons as I build my soaring experience. I have not yet gone cross-country or flown glass. I would like to compete someday, and I know there are a lot more bears in those woods. •

# A SHORT HISTORY OF SAILPLANE DEVELOPMENT

with some comments on the cost

## Jim Maupin

from "SHAp TALK",

Sailplane Homebuilders Association journal

MAN-CARRYING GLIDERS began with the pioneers Lillenthal, Montgomery, Chanute, and others around the turn of the century. Their gliders were foot-launched, and weight-shift controlled. Their work was truly pioneering, and proof of the possibility of gliding. In 1911 the Wright Glider No. 5 soared for 9:45 minutes, and that record held for ten years.

Gliding became a sport in the 1920's at the Wasserkuppe in Germany and other locations in Europe, as well as North and South America, and Australia. The first commonly used glider in those days was the Primary. World War I aircraft had firmly established the validity of three-axis control. These early primaries varied from fair to occasionally disastrous. One of the early problems was wings with little or no torsional stiffness, coupled with ailerons having no differential travel. In some, at higher speeds, aileron input by the pilot twisted the wing and resulted in reverse roll control — not too swift. At rest on the ground, the problem was not apparent.

In the late '20s and early '30s, gliders were built with the pilot enclosed, and we will arbitrarily call these sailplanes. In those days in the United States, men like Stan Hall, Irv Culver, Hawley Bowlus, and Volmer Jensen each produced a new design every spring for the new season. They almost never drew plans, because before the season had progressed very far they had great ideas for improvements, or next year's model.

This early flying was done in ridge lift, with an occasional daring pilot leaving the ridge under a moving cold front or thunderstorm. As a result, just staying up was the name of the game, and low empty weight was of paramount importance. Since the primaries flew off a skid, so did the early sailplanes, and launch was by bungee off a hill, particularly in Europe.

With autotow off sandy, dry lakes in California, skid landing was okay, but improvement was needed for takeoff. Along came the solution in the form of a four-wheel dolly. After takeoff the pilot dropped the dolly and landed on the skid. Oldtimers tell some exciting tales about the technology. On the first takeoff, the pilot dropped the dolly just after lift-off. The dolly tumbled, bounced, knocking holes in the bottom of the wood fabric fuselage. On the next try, the pilot was over-cautious, dropping the dolly from on high, and it was of course totally destroyed on impact. The next

step was a single fixed wheel, later it was made retractable.

As thermal flying began to develop, pilots knew that added weight on good days would improve penetration between thermals. First, lead weights were just lashed behind the pilot at the centre of gravity, then some enterprising soul put a plastic water bottle back there. At the end of the day, they would just reach back and pull the cork. The water found its way out of the wheel well, if it didn't run aft to the tail, upsetting the cg. Everyone knew the proper place to carry the water was in the wings, but it took the development of the fibre-glass sailplane to make this universal.

Everyone knew that added span greatly improved performance too, and Irv Culver tells of the new season when "Hutch" Hutchenson arrived at the soaring sight on the Palos Verdes Hills with a new 60 foot span glider. They were flying laps, and the turning point was an outhouse on top of a hill. Irv claims that Hutch misjudged his new span, caught a wingtip on the outhouse and made three complete circles around the outhouse before finally coming to rest. I wasn't there.

Early gliders had no glidepath control, but as performance improved the need was obvious. The earliest were spoilers. The Grunau Baby, designed in 1926, even though still flying off a skid, had spoilers. It was designed in Germany, plans were available, and it was probably the world's most popular sailplane. Some 6000 were built all over the world. Spoilers worked great and are still with us.

One of the next developments was flaps, and to my knowledge they were mostly an American idea. Flaps serve two separate and distinct functions on sailplanes. The first was glidepath control. Gus Briegleb in the mid '50s put short span flaps on the BG-12 series sailplanes. They moved down only, and they lowered the landing speed and allowed steeper approaches. All through this era and beyond, improvements were being made in theoretical and actual airfoil designs. The second function of flaps was to vary the camber of the airfoil, giving high lift at lower speeds while thermalling, then low drag at higher speeds between thermals. It was but a minor step to interconnect the flaps and ailerons so that at cruise settings they operated together. Then for landing, the ailerons returned to zero, and the flaps came down 60° to 90°.

Dick Schreder put these flaps on his HP series sailplanes, acting for both camber change and glidepath control. For two years or so, the European manufacturers resisted, would

not allow them in world competition, then reversed themselves and put them on both the 15 metre and open classes.

One of the most astonishing developments in all sailplane designs, to my mind, was Leonard Neimi's single handed development of the Sisu. It had camber changing flaps that moved both up and down, the upper skin flexed and there was no joint at the flap line. It had spoilers for glidepath control. It took Len years to build it. He told me he had no money, no time, and no help, and he moved twice during its construction. It first flew in 1958. It is the most successful competition sailplane ever built in America, won the national championships three times for three different pilots, and set three world records. Ultimately all sailplanes, except where disallowed by rules, use camber changing flaps.

In early flying, with the home field in sight, the pilot turned on final glide when he thought he could make it. In today's open class sailplanes, from 10,000 feet, the pilot can turn on final glide from 120 miles away! Improved instrumentation came along also. Paul MacCready's speed-to-fly ring, Oran Nick's total energy probe, then the wizardry of electronics. Today's cockpits have sophisticated (and expensive) computers, and coming soon are heads up displays on a clear panel in front of the pilot as he looks out. One of the greatest aids to safety was the addition of audio to the vario. Now in a crowded thermal, the pilot can concentrate on traffic with his ears giving him his climb signals.

Structurally, early sailplanes were wood and fabric, then metal and fabric, wood with plywood covering, then all metal. It is this area that the Schweizer brothers made their incalculable contribution to soaring in America. From the 1-7 introduced in 1937, all Schweizer sailplanes were metal. None used wood. They were not innovative, but the continuous production of strong, rugged, great handling and affordable sailplanes almost single-handedly built American soaring. And it was for love for the sport, as sailplanes cannot have been a major economic factor for Schweizer Aircraft. Just for example, besides subcontracting for Grumman and other major aircraft companies, during the time in which they built 700 1-26s, they also built over 2300 AG Cats.

The dramatic change in sailplane structures came with fibre reinforced plastics. The first to arrive in America was the Glasflügel H-301 Libelle which first flew in 1964 and was type certified in the United States in 1968. This development produced the beautiful compound curves our fuselages have today and the very accurate airfoils we have now. For the first time it became possible to mate theo-

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## FLIGHT TRAINING & SAFETY COMMITTEE

On February 1, I went with committee member Harold Yardy to talk to Transport Canada (TC) about three areas that are of concern to our Association at the present time. We met with Mr. Larry Cundy, Supt. of Licensing Standards, Mr. Hank Hemming, Superintendent Aviation Education, and Mr. Wayne Foy, Inspector. We discussed:

- a) currency requirements for passenger carrying,
- b) glider pilot exam requirements for licensed pilots,
- c) Air Cadets vis-à-vis licensing standards.

**The new currency requirement** is for pilots (including glider pilots) to have had five solo flights in the previous six months before flying with a passenger. This requirement is a direct result of the Dubin enquiry recommendations that TC are having to act on. After much discussion during which we stated that this will put an undue load onto our pilots, more so than power pilots who can do touch-and-go's (and of course we can't). It was concluded that:

- this requirement applies equally to instructing and applies even if the pilot has had competency checkflights at the season start;
- we stated to TC that we do not believe the accident and incident statistics show this is a problem area (though I have to admit that we can't show this for sure as we don't have adequate reports — the TC people did challenge us on this and, noting our recent accident record, said that perhaps this new requirement was justified!);
- we (SAC) do not know how much this will be a burden on our pilots at the start of the 1991 season which is the first full season during which this requirement applies.

It was proposed that we will make a submission to TC to obtain an exemption to this requirement, to allow clubs to meet the intent by other means, for example by requiring pilots to demonstrate competency through specified checkflights. TC said they would consider this.

It is planned that the FT&S committee will address this at the upcoming meeting in Quebec. We will need to canvas all clubs to obtain data about how this affects them at the start of the new season. We are working up a questionnaire for gathering the data and will send this out hopefully before the AGM. (I should point out that very few people in SAC have raised this point but we are working on the assumption that when the full impact is felt, we will get some objections.)

TC does recognize the differences between gliders and power planes(!) and in doing circuits to meet the five solo requirements etc, and stated that they will be prepared to

consider favourably a proposal from the Association. Clubs will be canvassed to aid this submission by providing data on how this requirement is affecting their operations. It's your committee's intention, working with interested CFIs, to make a submission to TC to implement an exemption to this requirement, to allow clubs to use the competency checkflight to meet the intent of this requirement.

**The glider pilot exam** for power pilots. It is now a requirement that a pilot holding a private or higher category power licence write the glider pilot exam as part of obtaining a glider pilot licence.

We said that we have had strong objections to this from would-be pilots and from members, particularly as many of these pilots are high-time pilots, and in any case they will have already written sections on Air Regs, etc, and why do they have to re-write these? The basic answer to this is that exams are written for each category of licence and so concentrate on the different areas of eg. the Air Regs, such as IFR versus VFR. Transport Canada's comments in this area were to the effect that even for high-time pilots who will have accumulated their time largely under IFR conditions, TC requires to examine them on gliding subjects and areas. The only way to do this is to have them write the whole exam. We suggested writing only gliding related sections, however the exam is not segmented so this creates a problem.

After discussion of related subjects such as SAC clubs running their own ground schools, administering exams following the ground schools (non-Transport Canada examinations), administering pre-solo exams (again non-TC exams), making recommendations for licensing (pilots and instructors), etc. we proposed that SAC clubs be permitted to administer a SAC exam for converting power pilots. TC said that these pilots will require a ground school at least to cover gliding-related subjects as part of their conversion training, so following this they will have had all the required training. In view of SAC's now administering and being responsible for many areas of training, we were told that our proposal would be looked on favourably.

We immediately agreed that we (SAC) will review the glide exams in Ottawa with TC personnel to agree on the areas that should be included in a SAC exam, following which we would write our own exam and submit it to TC for their approval (we were told that this will be required). As part of this process we would propose to them that SAC clubs be permitted to administer the exam, and that this then be reflected in modified requirements for licensing recommendations. It is tentatively planned that before the AGM in Quebec, Harold and I will travel to Ottawa to do this review and to agree on the applicable areas for the SAC exam. Then we might work on it at the committee meeting in Quebec.

**Air Cadet licensing standards** were discussed. Here we were attempting to feel out Transport Canada on whether there is a prob-

lem in their eyes, as many of our clubs demand extra training before they will allow the (licensed) cadet to solo at their club. The short answer is that so far as they are concerned, all glider pilot licences are only issued to those reaching the required standards! Therefore if there is a problem it is one of SAC members not handling the arriving cadet in the most diplomatic manner.

TC personnel agreed that the SAC-trained pilot tends to have more "soaring" training etc. They suggested that when a cadet comes to a club, the club member has to realize that the cadet is not only a prospective member now, but also a potential future and therefore long-term member whether or not he or she joins immediately. The cadets are in the "learning" phase of their lives and can readily be given extra training if required, but they have to be told so diplomatically, as they do after all have a licence!

If we want to increase our SAC membership in the long run, and to make our clubs attractive to the younger generation, we have to realize that the Air Cadet movement represents a very fertile ground for new members. Our clubs have to diplomatically tell the cadet that a few flights will normally be required to show them a thing or two, and to get them fully competent to fly in a club environment, to become familiar with the club operations and rules, etc. It shouldn't be too difficult, but we got the strong message that our clubs are not very welcoming; it seems the Air Cadet people have been talking to TC about SAC too! As a few clubs are in danger of becoming clubs for retirees only, perhaps we should examine our goals for the long term; who will run wing, etc, when the old bones are even more creaky than today?

With our tails somewhat between our legs we agreed that SAC should try to re-establish an on-going dialogue with the Air Cadet movement and with the new military training supervisor in Ottawa. Can this subject be taken up by the Directors, as I don't think it is in the FT&S committee's area, though of course we are very interested.

### Update

Recent meetings of this committee have been concentrating on setting up new or revised programs to address our safety concerns, recognizing that both Transport Canada and our insurers have been asking "What are we doing?" This short note is to bring the readers as up-to-date as we can, and to report to you on the latest initiatives.

### Passenger carrying requirements

Passenger carrying is a concern to the committee, with too many incidents/accidents in this category in the recent past. Clubs are urged to review their training of pilots when they are being checked out to take passengers. Basic requirements are being put into a free flight article to assist pilots and clubs to review their currency and local requirements.

**Video** Last year we started and have now completed a video, "Accidents and Pilot Planning". This discusses our spotty record and offers a method for improving decision making by pilots. It presents the "SOAR" 4-step method that is already being taught at the



Association's instructors courses. The video will be sent to all clubs together with several other safety related videos that the committee has received for our use from Air Canada through Ken Brewin. A "guide" for clubs to set up and run meetings will be sent with the videos, to serve as a focus for discussions of safety initiatives of their own.

**Accident/Incident report form** To help clubs and individual pilots get better feedback from incidents and accidents we have amended the reporting form and are providing a guide for filling it in. We are adding notes on the "SOAR" decision-making technique to the Incident/Accident report form, to provide pilots with a method of looking back into the chain of events of the incident or accident, which will lead to a better insight into the initiating event. Note that we wish to receive anonymous incident reports whenever a chain of events was (luckily) broken to avert an accident and indeed we wish to similarly get as full an account of an accident as we can, in order to provide feedback to you the pilots reading this. As part of this form update, we are asking the insurance company to assist us in distributing and receiving these reports. To back this up the committee has appointed a safety watchdog, to assist clubs not only to provide timely reports but to offer help in evaluating the incident. Ken Brewin, an Air Canada captain, will be doing the initial follow ups. In addition the resources of the committee are available to assist; we hope by these means to begin to get to the source of our problems.

**Instructor Upgrading** The committee is reorganizing the upgrading of instructors, to be done by the committee (Paul Moggach), effectively immediately. Details are being sent to clubs. It is hoped by this route to clear up past problems and to keep good track of our instructors, using modern technology to advantage. To obtain an upgrading to class I the Association requires the pilot to receive an upgrading refresher clinic. Such clinics will be set up on request of a club; Regina will host a clinic 31 May – 3 June; others are being arranged for SOSA and Bluenose, to name two others. The purpose of these clinics is to introduce the latest developments in training techniques and materials to established instructors, and to carry out demonstration flights to discuss the latest training and safety techniques that are being taught on the instructor courses.

**Instructor Badges** New badges for instructors are being designed, to provide more recognition to our hard working members. Bronze (class III), Silver (class II), and Gold (class I) badges will be presented at the time of upgrading and passing the Association's instructors exam. Existing instructors may request the badges equivalent to their class provided they have attended a SAC or equivalent club course, and/or an upgrading and refresher clinic and have passed the exam. Renewal of classifications will continue as before, on the recommendation of the club CFI. Precise details are with all club CFIs.

Club Safety Officers and CFIs will have a busy start to the season, if any FT&S committee member can assist in any way, please ask.

**Ian Oldaker**, chairman

## SAC HAS NEW SECRETARY

After working for SAC for four years, Nancy Nault has decided to move onward and has accepted a position with the Ottawa Separate School Board. Her new job with the school board will provide her with greater benefits and a pension, as well as more people around her, something she missed in our office.

In her usual style, Nancy looked after us by assisting in obtaining her replacement. She wrote a job description and sent it to the Sports Centre who selected candidates. Two candidates were interviewed by Nancy, Ulli Werneburg and Jim McCollum. The three of them chose Joan McCagg as our new Executive Secretary.

Joan left a position as Executive Secretary at a development company to join us 4 February. Besides having office skills, Joan is the Vice President of the Ottawa Women's Hockey Association, and is the Convenor of the International Women's Hockey Tournament — Nepean Games. So we are lucky to find someone who knows what it's like working with volunteers!

We'll all miss Nancy, I've especially appreciated her help and understanding over the past year.

**Chris Eaves**

## SAC AGM DIRECTORS' MEETINGS

**1 March 1991** With a quorum present, the president opened the meeting at 1320 hours. It was moved by Harald Tilgner, seconded by Gordon Waugh that the January meeting minutes be accepted as recorded. Carried

Business arising from the minutes.  
1990 Club statistics — The response was better than last year, but still provincial directors report that some fault could be the mailing address of club presidents, and perhaps mailing to club secretaries would ensure that the forms were received promptly and action taken. Discussion took place on how to ensure that clubs respond to this critical request. It was decided that delinquent clubs be listed in free flight.

Sporting committee chairman — Charles Yeates has expressed a willingness to assume this post and confirmation is being sought.

1991 Nationals report — Organization is going through a fine tuning. A very significant prize has been obtained from Air Canada but difficulty is created with the handicap situation when the two classes have different tasks.

Trust deeds — Motion by Harald Tilgner, seconded Paul Moffat that the proposed housekeeping rewording to the trust funds be accepted with fine tuning to be accomplished in the coming year. Carried.

50th Anniversary of SAC — A person or committee is needed to organize an agenda for this event and set up a special AGM. Ulli Werneburg will look for a chairman in the Toronto area.

## New Business

Financial statement — reported by Al Sunley and discussion took place on the make up of the amount transferred to the Pioneer trust fund. This consisted of \$10,615 of donations plus a transfer from general revenue of \$5,163.

Budget — Considerable discussion on the late information that the insurance company would handle the administration of the policy and collection of the premiums at no cost to SAC or increase in the premiums. Budget was reviewed, and then reworked to reflect the \$10,000 loss in fees resulting from dropping the SAC administration fee. A new budget presentation at AGM on Sunday is required with changes as the old budget mailed out to the clubs is now obsolete.

Moved by Chris Eaves, seconded by Al Sunley that the Board accept the Canadian Aviation Insurance manager's quote for 1991. Carried

Moved by Chris Eaves, seconded Harald Tilgner that Sedgwick James completely administer the 1991–92 insurance policy at no additional cost to SAC or its members on a trial basis for one year. Carried

New proposals regarding safety — Discussion how to implement incentives to clubs for having least accident/incident situations. DoT regulation re written exam required for power pilot conversion.

Moved by Harald Tilgner, seconded Gordon Bruce that Board of Directors compose and direct a proposal to Transport Canada that the rule regarding the mandatory writing of the glider pilot exam by power pilots converting be rescinded. Carried

Discussion during the motion indicates that the letter will be coordinated with Ian Oldaker.

The meeting adjourned at 1730 hours.

**3 March 1991** The President Chris Eaves called the meeting to order at 1330 hours.

## Election of Officers

- Chris Eaves declined to stand for re-election as President. Al Sunley was nominated and elected as President.
- Harald Tilgner was nominated and re-elected to the position of Vice-President.
- Jim McCollum was nominated and elected to the position of Treasurer.
- Colin Bantin was confirmed as SAC delegate to the IGC meeting in New Zealand.

Matters arising from Friday's meeting — It was confirmed that FAI fees were reduced to \$5050 from the budgeted figure of \$5500.

Sporting chairman — still to be confirmed  
Technical committee — Chris Eaves appointed as chairman to allow Herb Lach to have more time to use his expertise on type approval and involvement with government officials in obtaining certification.

The Board expressed their thanks to Chris Eaves for the many hours he put forth during his tenure as President.

**Al Sunley**

**SAC AFFAIRS** continued on next page



# Club news

## CVV DE QUÉBEC

The beginning of the 1990 soaring season at QSC at St-Raymond was bleak; flying started only in May, and weekend after weekend were washed out in May and June. This produced a delay in membership renewals as well as in recruiting. Then the weather cooperated. July and August produced very good soaring conditions and several cross-country attempts, unfortunately no 300 km. Our 50 km milkrun now is St-Raymond to Lac-à-la-Tortue airport, not too easy because against the prevailing NW wind, not too difficult because the airport is easily identifiable — just next to a large lake. The glider can be retrieved by towplane.

As of September 3rd our wave flying base at Baie St-Paul has been activated with transfer of the L-19 towplane, Blanik, B4 and the private Std. Cirrus. SAC directors arriving for the October board meeting will have an opportunity to sample site and flying. We are praying for the right wind and the right LOW position. Towrope and weak links are new and strong ("weak"?). Several members are due for at least a decent gold climb.

A major decision has been taken and the Club purchased the privately owned Standard Jantar 2, C-GBRP. In exchange the Grob

one-seater has been put up for sale. Jantar and Pilatus B4 now form the club's "high performance" end of the fleet. However the Jantar will not participate this autumn at Baie St-Paul. Club rules require at least 25 landings at St-Raymond on type before allowing the pilot to fly the sailplane at the Baie St-Paul site.

**Alex W. Krieger**

## THOUGHTS ON CLUB EXPANSION

As we all know, aviation inflation, especially for new sailplanes, has generally outpaced the growth in club income over the last 10-20 years. We have come to the realization that modernizing an aging fleet is crucial for the long-term health of the Toronto Soaring Club (TSC). But, the cost of doing so has become extremely high, even over a term of 5 years or more. In light of this problem, we must increase our club membership levels substantially if we are to afford such a program.

What are the solutions? The basic approach adopted by the TSC is twofold. We believe, that in order to increase the number of club members we must first improve that which we have to offer; and, secondly, actively promote to the public the facilities and services that we can provide.

Improvement in club ground facilities began in earnest last year. A number of important investments were made to improve basic services. A new well was drilled for fresh water, a septic tank was installed, construction was started on washroom/shower facilities, a new 200 amp electrical service was installed, also a major effort by a few individuals brought our new 800 square foot clubroom with kitchen facilities a lot closer to completion. This year should see the completion of these projects.

We believe that it is essential to add post-solo flight instruction to the basic training program using modern equipment. In order to maintain member interest, particularly after solo, it is necessary to institute a structured introduction to cross-country soaring for post-solo students. To this end, we have placed an order for a new mid-performance two-seater which is capable of both aerotow and winch launch. To further expand the training program, we will be making more use of our winch for the 1991 flying season.

In our opinion, building a strong and lasting membership base requires a substantial investment in better facilities, broader training programs, and modern aircraft. If we continue on this course of action, I am sure that our club can grow over the next few years.

Have a good and safe 1991 soaring season.

**Stephen Foster**  
Treasurer, TSC

## SAC AFFAIRS concluded

### STATISTICS & RODEN TROPHY

Yes it's true — small fry do win!

Well it has now been two years since I took on the SAC Statisticians responsibilities. The major reason these club flight statistics are required is so that reliable national statistics can be used by the insurance committee and the Flight Training & Safety committee when negotiating with Transport Canada, which has a lot of potential to over-control our soaring activities. (As getting information from clubs has been so spotty over the years, SAC may now make the forwarding of such data a mandatory requirement of SAC membership — see AGM Minutes in the "yellow pages" insert. editor) Also, during my time, some changes have been made in how we calculate the winner of the Roden trophy and the kind of information gathered to make those calculations. These changes have been and hopefully will continue to be made so as to entice many of our more reluctant clubs into participating in this award.

When I took on this job I was immediately struck by two impressions. First, the award seemed to be dominated by the large clubs and second, surprise in finding that only 18 of the SAC registered clubs bothered to send in the stats sheets for 1989. Could this be ambivalence on their part as a result of the same clubs winning year after year?

Therefore I checked the formula and, lo and behold, only actual club aircraft and inactive club aircraft were factored into the equation. Also fully 55% of the reporting clubs had private fleets greater in size than the club fleet and an additional 12% had at least the equal number of each. This brings into question the validity of the formula, so ... a minor modification was made to the equation. The total glider fleet now includes all private gliders based with the club. The amended formula for the 1989 flying year was:

$$R = \frac{F + 10H}{10(G + 1)} + \frac{2(S + 2D)}{G} + \frac{L}{10G(T+W+0.5)}$$

A new flying year has since been completed and we got a slight improvement in reporting — 22 clubs sent in stats albeit with a lot of prompting. Oddly not all the clubs were the same as last year. As with all things, the more familiar with a topic the more flaws you can find. With that in mind I tried another change on the formula to see the effect it would have (this has not been adopted and was calculated after the approved formula was used). This change added 1/2 the private glider hours to the last part of the formula to credit the private aircraft being used at the club. The affect on the points was anywhere between .09 and 6.88 (Ariadne has no club gliders). Whether this change will be implemented alone or combined with the recommendation below is not yet known. This is what it looks like:

$$R = \frac{F + 10H}{10(G + 1)} + \frac{2(S + 2D)}{G} + \frac{L + 0.5P}{10G(T+W+0.5)}$$

This year I am also proposing that more of the badge awards be used in calculating the total Roden points. This is not to weight the outcome in any particular club's favour, but to more accurately assess a club's overall performance. Presently only solos and Silver duration flights are used, yet there are many more badges/badge legs earned. To come up with the right mix, I have changed the SAC stats form to include most FAI badges as well as the SAC bronze duration badge. This form is being redesigned to make it more friendly.

I know that it seems there is a lot of monkeying going on with the Roden trophy formula but it is an honest attempt to justly award this thing to the club that really earns it. Last year the Cold Lake Soaring Club won and now Bluenose Soaring has won for 1990. Who says smaller clubs can't win? Both these clubs have around 40 members and 3 or 4 club aircraft. They have shown that with dedication and lots of work a lot can be done with few resources. If any one has comments or suggestions on how to further improve the formula they will be appreciated. Now if only other clubs like Erin, York, Windsor, SOSA, Saskatoon, Toronto Soaring ... would send in their reports they too could have a chance.

**Randy Saueracker**  
SAC Statistician

# Hangar flying

## WINNIPEG GLIDING FLIES HIGH

They were a colourful group, Jim in blue, Larry in red, Janette in a pale white and the rest in various shades in between. We are not talking of the clothes that they wore, but rather the facial tone as each person alternately experienced the effects of hypoxia at the University of North Dakota's High Altitude Barometric Chamber during the weekend of 9-10 February, 1991. This tour was organized by our club member Larry Morrow. For the entire day on Saturday the group was lectured on various topics ranging from the atmosphere and the body, to the use and operation of various oxygen systems found on board aircraft, followed later by a flight in the high altitude chamber to 25,000 feet. Ten members took part in the seminar with a wide diversity of experience. We had a pre-solo pilot with limited flying time to a member with over 20 years of flying behind him. But the effects of hypoxia do not look at experience and can affect anyone in different ways. This day of learning would enable each and everyone to learn their own personal symptoms of hypoxia.

Hypoxia by definition is the lack of oxygen in the body cells or tissue. During the "flight" in the barometric chamber the pressure is slowly decreased and the effective altitude increases to 25,000 feet ASL. During the ascent all those inside are breathing oxygen through their masks and will not feel any ill effects. Once the height is stabilized half the group is told to take off their masks and breath the chamber air. During this time off their masks they are required to do some simple tasks. One is trying to put various shaped blocks in their corresponding holes in a box, while others are doing some simple arithmetic and writing tests. It is interesting to watch from out-side while each person be-

gins to suffer from hypoxia. Outwardly they show no real symptoms other than a change in facial tone but their skills soon deteriorate to the point where they cannot complete their assigned tasks. The chamber technicians are constantly alert for any trouble and within 5 minutes all were back on pure oxygen and recovering their senses. After everyone in the chamber went through the tests they were asked to describe what they experienced. Many had an almost instant decrease in vision while others indicated that they felt hot and confused. One person circled on his test sheet that he felt unconscious. How he knew this we may never know! But it was obvious that severe impairment set in quickly and often without warning.

Almost everyone who participated in the demonstration felt that the opportunity to feel the effects of hypoxia and to learn more about high altitude flying and the risks involved was well worth the price of the course. For the entire day, including the lectures and the flight in the chamber, the total cost ran around US\$250. For anyone thinking of wave flying a course like this is almost essential.

For those that are technically minded here are a few facts on the chamber itself. It can simulate any altitude up to 100,000 feet but for normal demonstrations they only go up to 25,000 feet. The overall length is 18 feet with a width of 8 feet. The chamber is separated into a large area where the actual tests are done and a second smaller chamber that has an "in-flight" access air lock to permit taking a person out without having to spend time coming back down to sea level. A useful item should someone start to experience a medical problem. It also allows materials to pass into the chamber for the technicians. The large chamber can accommodate up to 16 persons with each person having a

separate console with an oxygen regulator. Normal climb rates for the ascent vary from 2000 to 3000 fpm, and as a result some may encounter some nasal discomfort. To check this an initial climb is done to 6000 feet and back to sea level. If all is well then the flight begins.

The program offered at the university campus has been in place for just over a year and the technicians bring with them over six decades of combined experience in flight physiology and high altitude flight technology. If anyone would like more information on this program they can write directly to the university:

UND, Aerospace Foundation  
Box 8009, University Station  
Grand Forks, North Dakota, USA 58202  
Phone: (701) 777-4740

## Mike Maskell

### 2026 KM IN NEW ZEALAND

The first soaring flight to exceed 2000 km was recently achieved in New Zealand by Ray Lynskey. Flying a Nimbus 2, the 15 hour wave flight began at 6:30 in the morning. The flight course was a narrow non-FAI triangle going the full length of New Zealand, so unfortunately does not qualify as a world record.

### CANOPY CLEANING TIP

Never clean a canopy with a circular motion. Always rub in a straight line front to back. Then any fine scratches or marks will be less noticeable, particularly when flying into the sun.

from *Soaring Pilot*

## Coming Events

May 18-20, **Alberta Provincial Contest**, Innisfail, AB. Contact: Tony Burton (403) 625-4563.

May 31-Jun 3, **SAC Instructor Upgrade/Refresher Clinic**, Regina, SK. Instructor coach is Mike Apps. Registration \$10 by 24 May. For info call (306) 545-8039.

Jun 3-8, **Third annual cross-country clinic**, Regina. Intermediate to advanced instruction by Mike Apps and Jim Oke. Limit 15 sailplanes. Registration \$20 by 24 May. Call (306) 545-8039.

Jun 14-16, **Ontario Provincials**, Hawkesbury, ON. Practice day Jun 13. Note the date change. Sport and Competition classes — both handicapped. Contact: Robert DiPietro, 14 Place de Bohème, Candiac, PQ (514) 638-2264 (B), 659-9991(H).

Jun 23-29, **Eastern SAC Basic Instructor Course**, York Soaring.

Jun 24-July 5, **Canadian Nationals**, Pendleton, ON. Contact: Bob Mercer (514) 458-4627. New date.

Jul 19 - Aug 11, **World Soaring Championships**, at Uvalde, Texas.

Jul 27-Aug 5, **Cowley Summer Camp**, Cowley airstrip, AB. Canada's largest soaring festivity. Contact: Tony Burton (403) 625-4563.

Aug 18-24, **Western SAC Basic Instructor Course**, Winnipeg Gliding Club.

photo unavailable

Mike Maskell

real thing. The caress of a thermal in the seat of your pants; gazing down through a huge gaggle before the gate opens; the creamy smoothness of a wave; or the shocking violence of a high speed finish — the most vivid of memories is no substitute for the exhilarating reality.

It's bad enough having to put soaring on hold for external reasons: finances, family problems, a two year assignment to the branch office in Little America. But these things can be remedied eventually, and you can get back to the important part of your life. There is still no known remedy for the indignities that go with an excess of years. In the absence of miracles, all of us sooner or later discover that our bodies are not necessarily our best friends; at times, they even seem to betray us. The big trick is knowing where to draw the line ... and having the resolve to do it.

So my advice to those now trudging down the far side of the hill is to give yourself a hard-nosed reassessment. Lately, do gaggles seem to scatter at your approach? How long has it been since a friend invited you to fly his ship? Has anyone had to remind you to retract (or lower) your gear in the past year? Each spring, does your wife leave cruise brochures where you'll be sure to see them? In the final days of contests, are you a frequent DNC because of structural damage? If any of those ugly questions give you a shiver of recognition, it may be time for you to snuggle up to that cold turkey too.

Unless you're hopelessly stupid, you should know more about your flying than anyone else.

Most of the little mistakes we make can be kept secret from everyone — except ourselves. It is when mistakes start getting scary (or too frequent) that we need to reconsider our status as flyboys.

We're all familiar with those pieces in the paper about some old geezer soloing on his 90th birthday — but would you want to volunteer for passenger duty with him? At the other extreme, I vigorously disagree with the FAA and airline dictum that pilots should automatically be retired when they turn 60. I have known some pilots who should have quit before they soloed; and others in their 70's whom I would trust to fly me anywhere. Each of us has his own peculiar strengths and weaknesses; we'll reach our moment of truth, each in our own time.

Of course, you don't want to be too hasty. Within reason, give yourself the benefit of casual doubts until they are no longer casual. Swallow your pride and log some dual with an instructor you respect; get a second opinion. Unless the evidence of clear and present danger is overwhelming, try to delay, procrastinate, postpone, or put off any way you can the doomsday when you decide it's time to quit. Buy your wife tranquilizers, if that will help; if need be, cut down on competition, or give it up; restrict your adventures to benign Sunday afternoons, when the surface wind is under five knots; but don't renounce it completely until there is just no other sane choice. Because unless you come from another planet, you will never, ever stop missing it.

Is there life after soaring? Yeah ... sort of. •

### Comment from Tom Knauff

As the average age of the pilots in our sport increases each year, Gren's words become more meaningful.

Dave Noyes' father, Richard, soloed when he was 78 years old. It was obvious to all that he would probably never reach the skill level required to attain a private glider rating. Father and son purchased a two place sailplane, an ASK-13, and Richard flew his Silver Badge, and I believe at least one Diamond leg with his son in the back seat as a safety pilot.

Of course the rules don't permit two place badge flights, but Richard did in fact fly the tasks! He doesn't wear the official silver badge, but you can bet he gained as much or more satisfaction from these flights as any young whippersnapper. In addition, his son Dave learned much about his father, and about his own later years.

It is sad to notice some older pilots quietly disappear from the soaring scene. It seems to me we need to make an effort to let the older pilots know we want them around for their experience and knowledge. If they reach the point that they shouldn't be flying on days with winds over five knots, then we should be sure to let them know a two place sailplane is available anytime; fully equipped with a safety pilot who promises to remain quiet in the back seat.

## A SHORT HISTORY OF SAILPLANE DEVELOPMENT

continued from page 11

retical airfoils with actual sailplanes delivered. Finally, the use of carbon (graphite) instead of fiberglass has produced things like the 86 foot span Nimbus 4.

If somebody tells you we have about reached the limit, don't believe it. Newer fibres will come along, and improved matrix. A good solution will be found to hold laminar flow all the way, etc. The future is bright, if expensive — which brings us to part two.

I cannot think of a single step in this development which has lowered costs. On the contrary, every step has increased costs until it has moved soaring out of the reach of most Americans. Part of our problem in recent years has been the falling value of the dollar. My friend Harold Buck ordered a new German sailplane, and by delivery date, the falling dollar had run his cost up 30%.

The second factor mitigating against Americans is our penchant for litigation. American companies not only don't want to sell sailplanes, they don't even want to sell small airplanes. Cessna now builds only multi-million dollar Citations, etc.

Although the problem is worse in America, OSTIV has recognized that high costs are a

worldwide problem and has taken a first step in the right direction by launching the World class design contest. The criteria has many restraints, lots of which are aimed at reducing costs. I applaud the effort, but I'm afraid in the cost area it may be only minimally successful. In the specifications, it was hoped that the finished sailplane might sell for about the same price as a compact car. Today a compact car sells for about \$8000. Piero Morelli, in his paper on possible development of gliding worldwide, calculates the cost of standard class gliders today at about \$60,000, and estimates the world class will come in at around \$35,000.

What about homebuilding? While I clearly have a bias about this, let me say from the start that I think the build-it-yourself route is not for everyone. I have had phone calls from would-be homebuilders to whom I have strongly recommended moonlighting at whatever they do well and enjoy, and using the income to buy a good new or used sailplane. If you are not looking forward with great pleasure to 500 to 1000 hours in the shop, you shouldn't start. If you do, you may not finish.

With that out of the way, a look at homebuilding of flying machines nowadays is instructive. The Experimental Aircraft Association

states that in the last year of record, there were more homebuilt airplanes registered with the FAA than factory built.

The December 1990 issue of *Kit Planes* magazine includes a directory of plans and kits. 172 individuals and companies offer 400 different plans and/or kits to choose from — 270 are kits of various degrees of sophistication, 130 are plans only. Kit prices range from a few hundred dollars to \$165,000. The majority fall in the \$6000 to \$10,000 range.

One final comparison: in 1955, when the 1-26 was introduced, the kit sold for \$1495 and the finished glider for \$2250. That year, the average price for the least expensive Ford, Chevrolet, and Plymouth, Nash Rambler and Studebaker was \$1725. In 1980, when the 1-26 production closed, the 1-26E sold for about \$13,500, and Paul Schweizer says if it was produced again it would have to sell for about twice that.

It is my opinion that if we are to get sailplanes down into the price range of a compact car and bring a lot of people in America into soaring, it will come via sophisticated kits that can be assembled from a few pre-molded parts fairly quickly by the homebuilder without sophisticated tooling. •

# FAI badges

**Larry Springford, 45 Goderich Street  
Kincardine, ON N2Z 2L2 (519) 396-8059**

The following Badges and Badge legs were recorded in the Canadian Soaring Register during the period 1 January to 28 February 1991.

## GOLD BADGE

250 Duncan Marshall Gatineau

## SILVER BADGE

814 Gail Oneschuk Rideau Valley

## DIAMOND ALTITUDE

Lewis Burwash	Edmonton	5450 m	ASW-20FP	Cowley, AB
Samuel Whiteside	York	5640 m	Grob G103A	Minden, NV
David Key	York	5440 m	Grob G102	Minden, NV

## GOLD ALTITUDE

Samuel Whiteside	York	5640 m	Grob G103A	Minden, NV
David Key	York	5440 m	Grob G102	Minden, NV
William Park	Gatineau	4200 m	Skylark 4	Warren, VT
Duncan Marshall	Gatineau	3380 m	Skylark 4	Warren, VT
Gail Oneschuk	Rideau Valley	3090 m	Libelle 201B	Lake Placid, NY

## SILVER ALTITUDE

David Key	York	5440 m	Grob G102	Minden, NV
William Park	Gatineau	4200 m	Skylark 4	Warren, VT
Gail Oneschuk	Rideau Valley	3090 m	Libelle 201B	Lake Placid, NY
Donald Matheson	Alberni Valley	1650 m	RHJ-8	Port Alberni, BC

## SILVER DISTANCE

Gail Oneschuk	Rideau Valley	106.0 km	Libelle 201B	Kars, ON
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## SILVER DURATION

David Burgess	Vancouver	6:55	Libelle 201B	Hope, BC
Barry Usprech	London	5:24	Skylark 3	Embro, ON
Gail Oneschuk	Rideau Valley	5:59	Libelle 201B	Kars, ON
Donald Matheson	Alberni Valley	6:28	RHJ-8	Port Alberni, BC

## C BADGE

2268 David Burgess	Vancouver	6:55	Libelle 201B	Hope, BC
2269 Ted Schmidt	Bulkley Valley	2:47	Blanik L13	Smithers, BC
2272 Todd Ciekiewicz	Regina	1:19	1-26	Odessa, SK
2273 Barry Usprech	London	5:24	Skylark 3	Embro, ON
2274 Mark Webb	Kawartha	1:10	Puchacz	Omamee, ON
2276 Donald Matheson	Alberni Valley	6:28	RHJ-8	Port Alberni, BC
2277 Yvan Chassé	Appalachian	1:35	Pioneer II	Sherbrooke, PQ
2278 Nathalie Hivert	Appalachian	1:03	Bergfalke III	Sherbrooke, PQ
2279 Markus Lechner	COSA	1:10	2-33	Fowlers Corners, ON

## PHOTOGRAPHIC EVIDENCE REQUIREMENTS NOT MET

One particular aspect of photographic evidence requires emphasis. The "Sporting Code, Section 3, Gliders, 1988" paragraph 2.2.7.2 and the SAC booklet "A guide to FAI Badge and Record Procedures — 5th Edition" paragraph 8.6 are both quite clear.

Where photographic evidence is used, a photo of the declaration board must follow the turnpoint photos. There may have been some confusion about the need to take a photo of the tail of the glider in lieu of this declaration board picture. That is a usual requirement at contests — primarily to make it easier for the Contest Director to sort out which film belongs to which contestant. In addition, the references indicate that a photo of the glider on the ground (showing typical terrain and features) is required for outlandings.

I emphasize this now because in 1991, I will begin rejecting claims which do not conform to this requirement.

I fear that I have caused some confusion in this matter. In a number of letters to Senior OOs and in the SAC FAI guide, I have said that the actual time of the photo following the flight must be shown. This was wrong. It has been brought to my attention that the Sporting Code clearly requires the declaration board photo — but not the time of the photo after the flight.

**Larry Springford**, FAI Badge Chairman

## Note to OOs and XC pilots

Make the following changes to your copy of the guide to FAI Badge and Record Procedures, edition 5:

- para 7.4(e) – delete, "with current time"
- para 8.6 – delete, "with the latest time of day"
- Appendix C – Distance: change, 1 degree = 111.195 km  
– Pressure: change, 1 Atü = 14.7 psi
- Appendix D – 3rd line from bottom, change,  $k = 111.195 \text{ km}^\circ$   
It was brought to my attention that there are three errors in the sine and cosine values in the cos a calculation at (a). The method is still correct. These errors will be fixed in the next edition.

**Tony Burton**

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## THE FAI SPORTING LICENCE

An FAI Sporting Licence is required for: an "open" national, international or world sporting event, a national, international, or world record, and an event sanctioned by the FAI requiring an FAI Sporting Licence. It is not required for badge flights or provincial championships. Normally a Sporting Licence costs \$10; however, for "RUSH" or last minute requests less than two weeks before an event, the cost will be \$25 plus costs (minimum \$10). In the interest of avoiding needless frustrations, and possible disappointment — please apply for your 1991 licence as soon as possible. Thanks for your kind cooperation.

FAI Sporting Licences are issued by the Aero Club of/du Canada, (same address as SAC) (613) 739-1368, fax 739-1826. AAC Secretary: Beth McCollum

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# 1991 CANADIAN SOARING CHAMPIONSHIPS

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# Trading Post

## SINGLE SEAT

**L-SPATZ 55**, C-FAKQ, #641 built in 1958, 1320 h. For restoration; fuselage is good, wings need some work and recovering. Includes basic instruments and enclosed trailer. \$2000 Calvin Devries (519) 746-6597 anytime, leave message.

photo unavailable

**MONI**, powered sailplane, assembled from kit, 90% assembled and inspected, complete with engine (KFM 30hp) and instrumentation. Easily disassembled. \$10,000. For more info, call Mike Reeve (519) 652-5833 days, London, On.

**1-26D**, #408, 643h, totally renovated in 1990 with new fabric, paint (bright orange with chromed nose), glass, upholstery, tire & tube, oak skid. Alpha 100 radio, O2, encl trailer. \$7500, will consider trade. Robin or Jordie, phone/fax (403) 538-3979.

**KW-45**, CF-SNZ, 880h, Cirrus wings, excellent condition, ILEC vario system, radio, O2, ballast, encl. aluminum trailer. Fred Wollrad (403) 479-2886 (H).

**TERN**, excellent condition, standard instruments, TE elec vario with audio, calibrated speed ring, Gel cel battery with solar charger, Radair 10s radio, chute, encl trailer. \$4500 Ron Lien, Regina (306) 789-6366 evenings.

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## MAGAZINES

**SOARING** — the journal of the Soaring Society of America. International subscriptions \$US35 second class. Box E, Hobbs, NM 88241 (505) 392-1177.

**AUSTRALIAN GLIDING** — the journal of the Gliding Federation of Australia. Published monthly. \$A38.50 surface mail, \$A52 airmail per annum. Payable by international money order, Visa, Mastercard. Box 1650, GPO, Adelaide, South Australia 5001.

**NEW ZEALAND GLIDING KIWI** — the official journal of the N.Z. Gliding Association. Published bi-monthly with international and southern hemisphere soaring news. Editor John Roake. \$US24/year. N.Z. Gliding Kiwi, Private Bag, Tauranga, New Zealand.

**SAILPLANE & GLIDING** — the only authoritative British magazine devoted entirely to gliding. 52 pp, bi-monthly, and plenty of colour. Cdn. agent: T.R. Beasley, Box 169, L'Orignal, ON K0B 1K0 or to BGA, Kimberly House, Vaughan Way, Leicester, LE1 4SG, England. £12.40 per annum (US\$20) or US\$30 air.

**SOARING PILOT** — bimonthly soaring news, views, and safety features from Knauff & Grove Publishers. \$US20, add \$8 for foreign postage. RR#1, Box 414 Julian, PA 16844 USA.

## MISCELLANEOUS

**TWO TOWPLANES** — CITABRIA 7GCBC 1250TT, engine 920h, 180hp, Navcom, Xpdr — \$45,000  
CITABRIA 7GCBC 1750TT, engine 875h, 150hp, Navcom — \$25,000; both based at SOSA. Call Fred Hunkeler (416) 470-2612.

**K7**, out of service because of old glue. Canopy and instruments not included. Elevators serviced in 1990. Wings and trailer need repair. Good for restoration project or parts, \$2000 or offer. Cold Lake Soaring Club, c/o Marek (403) 594-7862 (B), 594-5525 (H).

**Parachute**, 24 ft Phantom canopy in "Slimline" container (see "Flying High" ad in 2/90). Very thin, light, flexible. Leftover from the Alcor project. Tested acid-free and repacked. \$900 (that's 33% off new price). Tony Burton (403) 625-4563.

**Vario**, Cambridge dual range in kts, \$250. **Compass**, \$30. **Speaker** 8Ω, \$10. **TE probe**, \$20. **Thermoflask** IL \$15. **Headrest**, adjustable, leather. Roman Levicek (403) 284-3187.

**Pioneer II**, flying wing kit plans, 80% parts, Marske-built glass fuselage shell & canopy. Ribs cut, flight controls made. Welded C/S, some hardware, no instruments. \$2000 obo. Lloyd Davies (204) 837-7280.

## REASONABLE USED SAILPLANES WANTED

If you are considering selling, call **FREE FLIGHT**. The editor is regularly getting calls to see if anything has appeared on the market. Don Wood (604) 658-8288, Tillmann Steckner (519) 471-3203 are looking for something right now, for example.

Flying High ad

## SUPPLIERS

### REPAIRS & MAINT.

**Sunaero Aviation**. Glider repairs in fibreglass, wood, & metal. Jerry Vesely, Box 1928, Claresholm, AB T0L 0T0 (403) 625-3155 (B), 625-3871 (H).

**Vankleek Sailplanes Ltd.** Specializing in sailplane repairs in wood, metal, or composites. Call Günther Geyer-Doersch (613) 678-2694.

**XU Aviation Ltd.** Repairs in wood, metal and composites. C. Eaves (519) 452-1240 (B), 268-8973 (H).

### INSTRUMENTS & OTHER STUFF

**Barograph Calibrations**, most makes and models. Walter Chmela, (416) 221-3888 (B), 223-6487 (H), #203, 4750 Yonge Street, Willowdale ON M2N 5M6

**Bug Wipers**. Mechanical device for in-flight wing LE cleaning, newly developed in Europe after ten years of R&D. Widely used at world contests. Cdn\$690.

**Mylar seals**, Cdn\$190. Peter Masak (Performance Enhancement Inc.) (713) 579-2254.

**Variometer / Calculator**. Versatile pressure transducer and microprocessor based vario and final glide calculator. Canadian designed and produced. Skytronics, 45 Carmichael Court, Kanata ON K2K 1K1. (613) 820-3751 or 592-0657.

**Firmal Electronics**. Cambridge vario systems and flight computers, TE probes, gust filters, and nettos. Barograph calib. Warranty service and repairs. 542 Coronation Ave, Ottawa K1G 0M4 (613) 731-6997

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President: Gordon Waugh

**FEDERATION DE VOL A VOILE DU QUEBEC**  
1034 St-Denis  
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Dorchester, ON N0L 1G3  
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J3V 3K5

**CLUB DE VOL A VOILE APPALACHIAN**  
Box 271  
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**ARIADNE SOARING INC.**  
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| 2. FAI 'B' Badge, Silver Plate   | \$ 5.00 |
| 3. FAI Badge, Cloth, 'C', 3" diameter  | \$ 4.50 |
| 4. FAI Badge, Cloth, Silver, 3" diameter   | \$ 4.50 |
| 5. FAI Badge, Cloth, Gold, 3" diameter   | \$ 4.50 |
| (above items available from SAC National Office)   |         |
| 6. SAC Bronze Badge - available from your club   | \$ 5.00 |
| 7. FAI Gliding Certificate (record of badge achievements)  | \$10.00 |
| 8. FAI 'C' Badge, Silver Plate (screw back)  | \$ 5.00 |
| 9. FAI Silver Badge  | \$39.00 |
| 10. FAI Gold Badge (gold plate)  | \$35.00 |
| 11. FAI Gold Badge (10 k or 14 k)  |         |
| 12. Diamonds (Items 7 - 10 available from Chairman FAI Awards. Items 11 and 12 not stocked, external purchase approval given.) |         |
| 13. PROCESSING FEE (for each application form submitted)   | \$10.00 |
| 14. FAI badge application form, rev. 6 (stocked by CFI or SOO)   | n/c     |

**MANUALS, STATIONERY, FLYING AIDS**

- |  |             |
|--|-------------|
| 20. FAI Sporting Code, Gliders, 1990 (check payable to ACC ) | \$ 5.00     |
| 21. FAI Sporting Code, General, 1989 (check payable to ACC ) | \$ 5.00     |
| 22. FAI Badge and Records Procedures Guide - edition 5       | \$ 5.00     |
| 23. Panel checklist CISTRSC (green), and SWAFT (red)         | set \$ 1.25 |
| 24. Glider Pilot Log Book (box of 60 - \$360)                | \$ 7.50     |
| 25. Student Progress Book, revision 1985                     | \$ 2.50     |
| 26. Air Instruction Notes, revision May 1988                 | \$ 3.50     |
| 27. Soaring Instruction Manual, revision January 1980        | \$ 5.00     |
| 28. Weather Briefing Form N-052                              | n/c         |
| 29. Official Observer application                            | n/c         |

**CERTIFICATS ET INSIGNES**

- |   |  |
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| Epinglette, brevet 'A', plaqué argent   |  |
| Epinglette, brevet 'B', plaqué argent   |  |
| Insigne FAI, tissus, brevet 'C', diamètre 3"  |  |
| Insigne FAI, tissu, brevet argent, diamètre 3"  |  |
| Insigne FAI, tissu, brevet or, diamètre 3"  |  |
| (les articles ci-dessus sont disponibles au Bureau National de l'ACVV)  |  |
| Insigne SAC, brevet bronze  |  |
| Certificat FAI de vol à voile (recueil des insignes)  |  |
| Insigne FAI, brevet 'C', plaqué argent  |  |
| Insigne FAI, brevet argent  |  |
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| Diamants (Les articles 7 à 10 sont disponibles auprès du Président des Prix de la FAI. Les articles 11 et 12 ne sont pas en stock.) |  |
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| Formulaire de demande pour insignes (disponible auprès du chef-instructeur ou l'OOS)  |  |

**MANUELS, IMPRIMÉS, ACCESSOIRES DE VOL**

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| FAI code sportif, planeurs, édition 1988                         |  |
| FAI code sportif, section général, édition 1986                  |  |
| FAI insigne et records - guide des procédures, édition 5         |  |
| Vérifications (auto collants), CISTRSC (vert) et SWAFT (rouge)   |  |
| Carnet de Vol pour pilote de planeur (boîte de 60 - \$360)       |  |
| Carnet de progression de l'élève, rev. 1985                      |  |
| Instructions en vol - Notes, rev. mai 1988 (français)            |  |
| Vol à Voile - Manuel d'instruction, rev. janvier 1980 (français) |  |
| Informations météo, imprimés N-052                               |  |
| Formulaire de demande pour observateur officiel                  |  |

All supplies (except 7 - 12) available from SAC National Office, 306 - 1355 Bank Street, Ottawa ON K1H 8K7.  
Ontario residents add 8% provincial sales tax (manuals 20-27 excluded). No GST req'd. Postage included - La livraison est incluse.

**S U P P L I E S**