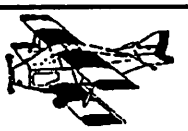
Skywriter

Monthly Newsletter of the Calgary Ultralight Flying Club

May 1990

View From Above



by Paul Hemingson

About fifty folks at the April meeting heard Moe Baile, the Western Regional Safety Officer for TC, talk about the human element in safety. Moe's key idea was the importance of recognizing the extent to which destructive behavior and attitudes lead up to accidents/incidents. Using slides, Moe demonstrated how the five most hazardous attitude (anti-authority, impulsivity, invulnerability, machoism, and resignation) can lead to grief. His human anecdotes and asides put a lot of flesh on the bones of pilots past. These pilots have left a legacy of learning for us. We are all human, but for pilots, it is especially important to be ever vigilant for the gremlins that affect our behavior under differernt conditions, and to guard against letting these attitudes control our judgement. It is easy to recognize hazardous attitudes in others. What is important is to identify these attitudes in ourselves.

Here is a little quote that you might want to tape onto your bathroom mirror, fridge door, or your logbook...."Pilot judgement involves one's attitude to risk taking and the ability to evaluate risks and make decisions based on your knowledge, skill and experience".... that is a mouthful of words ....chew on them a bit. Knowledge, skill and experience determine the quality and timeliness of our judgement. Much can be learned without ever taking to the air....the mental skills to fly safely are just as important as the physical skills. Be Disciplined, Be Professional, Be Safe.

On to other things. Here is a listing of some upcoming events:

Calgary Flying Club/RAA Fly-In and Breakfast, May 6, 1990, at Springbank airport. Fun starts at 0800 hours.

RAA Convention, June 16, 1990, at Medicine Hat.

Planetarium Exhibit, mid-May, Calgary.

Red Deer Airshow, August 4-5, 1990, at Red Deer.

CUFC Social+, TBA, at Indus.

Wayne Woloshyn of Transport Canada in Calgary, was at our April meeting and indicated to me that he was prepared to pu on an instruction workshop if enough of our members are interested. More on this at the May meeting.

Gord Keegan is heading up our display at the Calgary Planetarium, which is due to be held in mid-May. Gord would appreciate some help in setting up our booth and answering questions from the public.

Jim Creasser is heading up our participation at the Red Deer Airshow and requests that those interested need to forward to him: your name, license number, aircraft type and registration letters. This does not commit you to attend, but will give Jim a better handle on planning.

Most of you are probably well on the way to getting your machines ready for the summer. It is a nice way to spend a warm spring day with the sun on your back, preparing things so that when the good flying weather comes you are ready to get up and get at it. Easier said than done, what with all the other little chores that melting snow uncovers before your eyes. You know, all the Honeydew jobs..."Honey, can you/would you/did you do...." One item not to overlook in your checkout is the condition of the airstrip. It's amazing how new rocks and holes appear after the winter. It seems that the frost action of multiple freeze-thaw cycles acts differently on boulders than moisture laden soil and tends to push the rocks to the surface. As for holes, well my strip is a study in gopher residential development. Last year's holes don't seem good enough for them, so they are busily digging like they have some kind of master plan to implement before the GST (Gopher Subterranean Tryst) is consummated. So, a little walkout of the strip is in order.

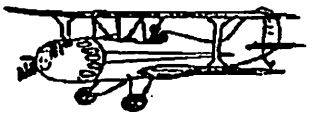
Wire-Strike!

Bernie Kespe is recovering quickly after a near-disasterous encounter with a power line on Saturday, April 14. Bernie was flying his Beaver north east of the city when he attempted to make a precautionary landing in an open field. Unfortunately, his nose gear caught a power line running across the near end of the field at about 30 feet. At time of writing, Bernie is being treated in hospital for fractures to one leg, his hip and several ribs. He is expecting to be out of hospital in time to attend the May meeting.

Although his Beaver is virtually a right-off, Bernie says he is anxious to get back to flying again.

Editorial

by Bob Kirkby



The latest Transport Canada stats on registered aircraft in Canada show some interesting ratios.

As of March 1, 1990, the registered aircraft count is as follows:

Commercial	5,790
Government	300
Private	16,810
Amateur-built	1,713
Ultralight	3,224
Total	28,121

If you total the categories, it comes to 281 less than the total stated. My source did not specify what accounted for this extra 281, but I am sure Transport Canada knows where and what they are. Perhaps they consist of such things a Gyrocopters which both exist and don't exist, depending on who you talk to in TC.

What I find interesting is the ratio of Ultralights to the total of Private, Amateur-built and Ultralights. It is a full 15%. Even if you compare Ultralights to the total, they respresent 11.5%. This has become a significant ratio.

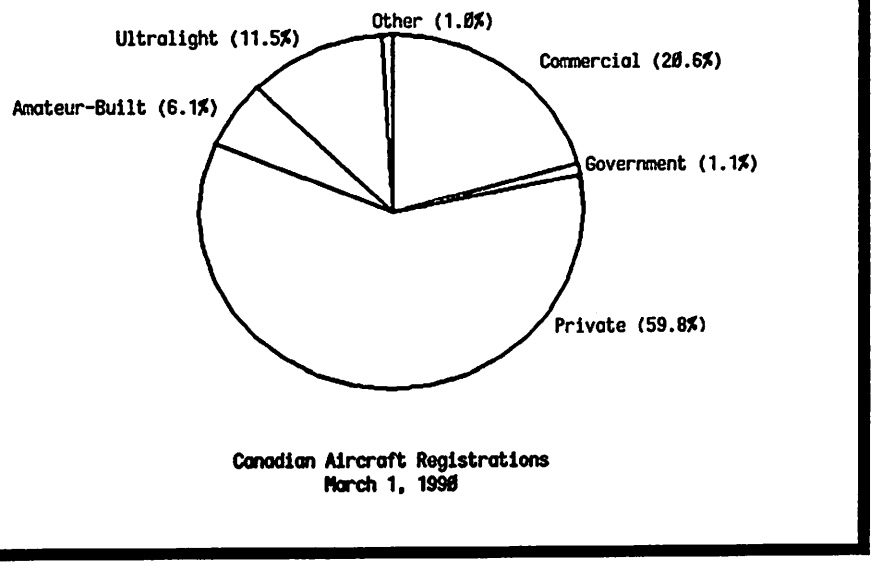
What is also interesting is the fact that in Canada we know this number. This knowledge probably contributes to the relatively high level of interest in Ultralights shown by Transport Canada. In many countries, USA included, an accurate count of ultralights in not available because registration is not required, and the government tends to ignore the Ultralight movement.

Although there are both positives and negatives to this "high level of interest", I tend to feel that it is mostly positive.

Another noticeable effect of the increasing Ultralight presence, is the more positive attitude from the media and general public, or perhaps it is indifference. I was pleased to note that the Calgary Herald's two reports on Bernie Kespe's accident did not attempt to paint Ultralights as being dangerous hang-gliders with lawn chairs, as would have been the case a few years ago. There was however the inevitable question, "Are they safe?".

It is incumbent upon us, as Ultralight Flying enthusiasts, to do all we can to promote a positive image of our sport. Recently our club has been asked to participate in a number of exhibits or presentations. We must approach these opportunities professionally and paticipate whenever we can. To that end a good looking and informative table-top display should be put together for the club.

With the anticipated new regulations and the abundance of kits on the market today, perhaps next year Ultralights will be up to 20%!



Canadian Aircraft Registrations
March 1, 1990

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Meetings of the Calgary Ultralight Flying Club are held the first Wednesday of every month at the R.C.A.F. Association, 110 - 7220 Fisher Street S.E., Calgary at 7:30 PM.

Prop Up Your Plane

by Jim Creasser

There are several views on propellers, but conventional views are somewhat different than U/L needs or requirements. With real aircraft, there are a variety of props suitable for one aircraft. A climb prop, sometimes referred to as a borrer prop (as to bore a hole in the sky), a cruise prop, and anything in between. This latitude in choosing a prop doesn't exist in U/L use.

The Rotax engine, single carb, reaches maximum horse power at 6200 R.P.M., and therefore requires a prop that will limit the R.P.M., at full, throttle to 6200 to give maximum thrust. Thrust measured in lbs. is the end result that pushes our craft down the runway and through the air.

Because the power curve of a Rotax is a steep line with a fairly abrupt peak and rapid descent, optimum R.P.M. of 6200 (single carb) and 6600 dual carb is desirable. A four stroker in turn might have a very flat power curve with a two to four hundred R.P.M. flat line at maximum horsepower with a gentle drop off after maximum power.

The sharp peak of the Rotax means if you are to take advantage of all the horses available, you must achieve maximum R.P.M. (6200 or 6600) at full throttle. The best way to achieve this is to have an adjustable pitch prop so you can "tweak" your prop to use every pony.

What will you get (performance) if you are not at maximum horsepower? The Chinook and Beaver manufacturers sent out their kits with the wrong prop, and I mean wrong in the sense of using all available horsepower. On the 2-place for instance, several machines I have seen were seeing seven thousand and more on the Tach. What did this accomplish? Several things, less thrust, more fuel, slower top speed, slower climb rate, more noise, and longer take off distance. I am not sure what the "engineer" was trying to accomplish, but I suspect he was afraid of customers reaching his published V.N.E.

Most of these owners did change to the right prop and found all of the numbers substantially improved. This same exercise on a conventional aircraft would have done what was intended, ie. better climb, shorter take off distance, but not with a Rotax.

Going in the other direction can be done with an adjustable pitch prop. Set your pitch to give maximum R.P.M. to 6000. This will rob your maximum power somewhat, but will allow 200 less R.P.M. for the same cruise speed and afford better fuel economy.

Ideally, we would have a cockpit adjustable prop and when ready to cruise, adjust to suit power and speed. There are simple inexpensive models in the works, but nothing available yet. The closest seems to be the new R.P.M. prop from Warp Drive. They claim the flexability of their composite blades works like an automatic prop (constant speed as they are called on conventional aircraft). They cite an U/L with a top speed of 90 M.P.H., cruising with a wooden prop at 50 M.P.H. and with the R.P.M. prop at 62 M.P.H. This sounds like the closest thing to constant speed we will see for quite awhile.

Some of the other misunderstood propeller facts are actually common sense. Two or three blades?

Ideally the fewer blades you have, the more efficient the prop. Also fewer blades requires more pitch, which means faster top speed. So a one bladed prop is the best for you, (a fellow in Alaska used to make one for maximum performance on floats, it had a counterweight). Next is a two blade, we found with the IVO props at 60" diameter the three blade was about the same thrust as two, but smoother. Warp Drive's Dale Kjelson, tells me the new R.P.M. blades (looks exactly like the IVO, but much lighter) are much smoother, because they are lighter in weight. So now he recommends two blades for almost all applications. He says the tip weight has a major impact on smoothness.

I guess the only time you would need 3 blades, would be a very small diameter with lots of horses. For my 6/10 scale P38 project with 582 engines and looking for 150 M.P.H. plus, I will need lots of pitch on the blades to give top speed and 3 blades for authenticity, so a fairly small diameter will be in order.

Looks like the ideal prop for your Sopback Eagle is a 114" single blade prop. Then we start with the compromises, you say your ground clearance is only 36", shorten that prop to 66" as you need at least 8" clearance for cutting grass. That fellow charges $1200.00 to carve that single blade and a local 2 blade is only $185.00. Let's use this one. And that is why you have the prop you do. A series of compromises that allows acceptable performance.

You can improve your performance numbers if you are willing to spend the cash.

Kodiac Research Sold

Ron Shettler recently sold his company to Pascal Ronvoux. Pascal is reported to have recently come from France where he was engaged in a Rotax distributorship, similar to Kodiac. He is an Ultralight and Glider pilot and, for now at least, will carry on the business as before.

Fly Paper

by Gord Keegan

Look Both Ways

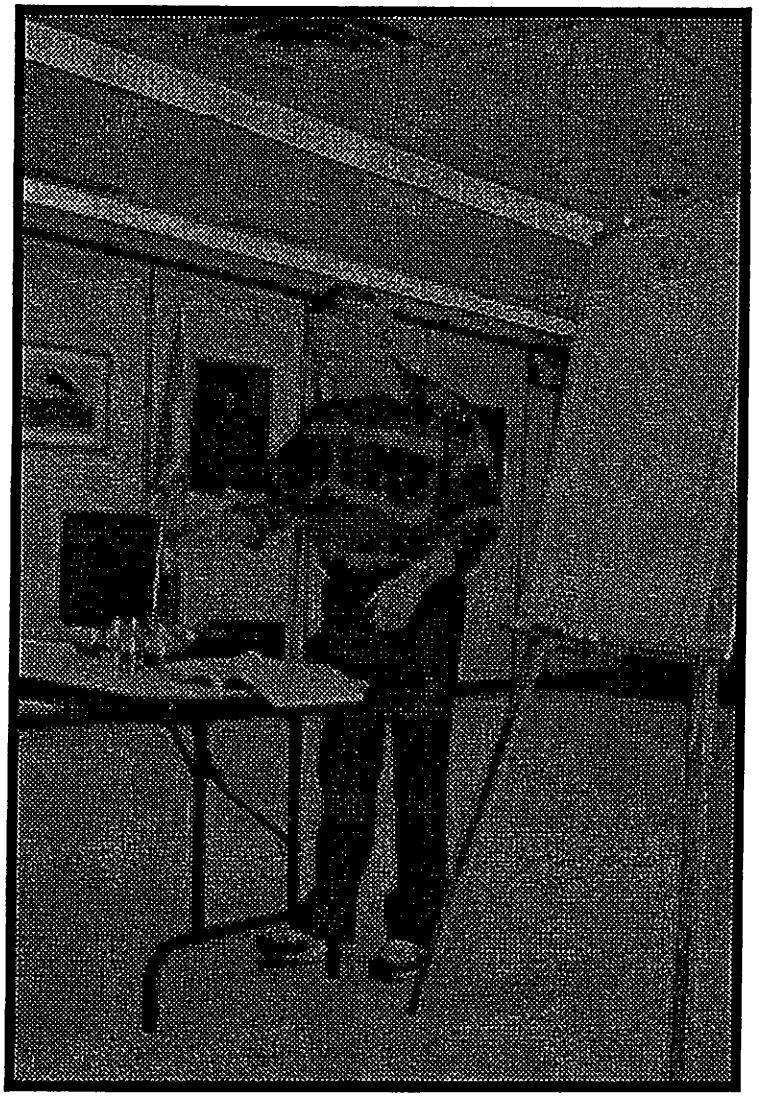
Last month we talked about some of the dangers that exist for the unwary pilot in the circuit. Let's look at a few more things that are easy to forget:

How many times have you taxied onto the active runway without taking a really good look for aircraft on final?

How many times have you gone screaming past the runway intersection without looking to see if someone else is screaming down the intersecting runway? You wouldn't do it in your car, why do it in your airplane?

These two situations are unfortunately common at uncontrolled airports, where procedures tend to be somewhat more casual and the active runway is a matter of opinion. The best car drivers are the ones who assume that nobody else on the road has any idea how to drive, we would all be wise to follow this same philosophy in the air.

There is no reason that the circuit should present any more hazards than any other phase of flight, as long as we all do our part to keep alert and pay attention to what is going on around us. Don't forget to "look both ways".



Jim Creasser gave a very informative talk on Bing Carburetors at the March meeting. Those who missed can find a summary in Jim's column in the March newsletter.

Classified

ABC Ballistic Chute - never used, hermetically sealed, excellent, new $1900., offers. Paul Hemingson 931-2363.

Beaver RX-550 - 2 place, Rotax 503 air-colled engine, pitot airspeed, altimeter, tach, EGT, CHT, Hobbs, hydraulic brakes, wheel pants, custom paint, ballistic chute, wing covers, less than 200 hrs., always hangared, never damaged. Hangar space available at Black Diamond. First $10,000. offer flies it away. Willing to sell shares. Call Gord Keegan, H. 242-7791.

Fisher FP101 - fantastic flying ultralight yet looks like a conventional aircraft. New, fly it away. $7000. Ralph or Wayne Winters 936- 5347 or 238-0406.

Boom Mic - M-87 low impedance dynamic microphone, fits most headsets, new, 2 available, $25. each. Bob Kirkby 226-0720.

Braid for shielding spark plug leads and ignition wires, $2. per foot. Bob Kirkby 226-0720.

Hagar Wheels - 1 pair of 6" Hagar wheels, new, $40. Bob Kirkby 226-0720.

Ivo Prop - 3-bladed, ground adjustable pitch, 60" diameter, composite blades, L.H. tractor or R.H. pusher, new, $400. Paul Hemingson 931-2363

Quicksilvers - MX-II, Rotax 503, 100 hrs, inst. pod, parachute, needs fabric, $4000.; also MX, Rotax 377, 75 hrs, needs fabric, $2500. Garry Miller 343-7082, Red Deer.

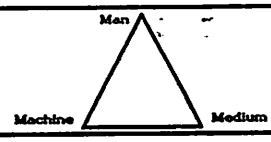
Rotax 277 - rebuilt in Vernon, belt drives, 2 sets of pulleys, complete exhaust. Offers. Russ Sirocek 274-8526.

Chinook - single-place, rebuilt 377, new prop, long range tanks, make an offer. Sky Master 335-3306.

Have a good day, Ace.

Safety Corner

by Paul Hemingson



How much is that Airplane in the window?

After buying a widget for my airplane recently, I got to thinking about the cost of owning and maintaining an airplane. It seems there is always something to buy to keep it in top form, and it never ends....just when you get to thinking that you have the ideal...the maintenance free airplane, along comes some airworthiness directive or case history that suggests you should replace/repair or gunnysack something. When the sales pitch includes a line like "safety doesn't cost, it pays", you will soon pull out your wallet. The maintenance free house, yard and airplane is a myth.

But what is the cost of flying?

Table 1, below shows some of the cost components that go into flying.

TABLE 1: Operating and Overhead Cost Components

GAS	_____
OIL	_____
PLUGS	_____
INSURANCE	_____
RADIO LICENSE	_____
HANGAR RENTAL	_____
MAINTENANCE	_____
DEPRECIATION	_____
FINANCE COSTS	_____
TOTAL	_____

You can fill in the blanks for yourself to find out your costs.

I have reprinted this table, below with some estimates of the costs. First, an explanation of some of the cost components...and the assumptions I used in arriving at the outcome for a typical case. I assumed an initial purchase price of $10,000, and that the average annual number of flying hours = 100 hours. Some of the costs are overhead and some are operating costs. Overhead costs are the same whether you fly one hour, or a thousand hours each year. For example, the cost of renting tie-down/hangar space is the same regardless of how many hours you put on the Hobbs. Operating costs are a direct function of how much you use the airplane. It's apparent that you can average down the overhead costs by operating your airplane more hours....this is why big aviation carriers want to get 100% utilization of their machines.

GAS: For easy figuring I assumed a burn rate of 2 gallons/hour which translates to about $5/hour. Your may be using more or less fuel.

OIL: Two cycle oil (good oil) is not cheap....and stale oil/gas mixtures are often thrown away or used in your lawn mower or whatever....so I used $0.50/hour, for easy figuring.

PLUGS: Most of us change our plugs after 15 to 20 hours and so for easy figuring, I used $0.50/hour.

INSURANCE: I assumed an annual cost of $150 for this item, this translates to $1.50/hr.

RADIO LICENSE: Once you get into Radio, it will cost $35/yr to renew your license...this translates to $0.35/hour...not a big item once you have made the initial outlay but it all adds up. I have not included the initial cost of getting into radio which could be another $1000.

HANGER RENTAL: I have assumed a cost of $20 per month or $240/yr., which translates to $2.40/hour for the 100 hour/year flyer.

MAINTENANCE AND REPAIRS: I have assumed an annual expense of $250/yr. for normal wear and tear...things like fuel filters, tie-wraps, safety-wire, AN hardware replacements, paints/solvents, fuel-line, tools etc., etc., etc...this all translates to $2.50/hour.

DEPRECIATION: Here I have assumed 15% per year..so this item would be in the range of $1500.00 in the first year. But, most machines depreciate much more in the first year and then tail off to hold their value depending on condition and history. But eventually we sell it and take a loss..so you can figure your depreciation based on the type of machine you have and its reputation for holding or losing its market value. Using the numbers above I have assumed $1500 divided by 100 hours=$15/hour.

FINANCE COSTS: This is another hidden cost of owning a machine. Basically what I am thinking of here is

(Continued on page 6)

(Safety - continued)

the dollar outlay that you make and the value of the alternative. In other words, if you had taken the $10,000 that you spent on the machine and invested it in Canada Savings Bonds or some other interest bearing account you could make, say 10% on the money you sunk into the aircraft. ...and at 10% that $10,000 would earn you $1000/year. So, if you fly 100 hours per year that financing cost translates to another $10/hour.

There is another item, which I have not included explicitly, and that is the money that you should consider setting aside for major overhauls and to cover accident damage. It's easy enough to factor this in but I did not include it because it's a high variable number depending on the type of machine you fly and the way it's treated.

THE MATHEMATICS OF OWNERSHIP

TABLE 2: EXAMPLE SHOWING COSTS OF OWNERSHIP

GAS	$5.00/hr
OIL	$0.50/hr
PLUGS	$0.50/hr
INSURANCE	$1.50/hr
RADIO/LICENSE	$0.35/hr
HANGAR RENTAL	$2.40/hr
MAINTENANCE	$2.50/hr
SUBTOTAL	$12.75/hr
DEPRECIATION	$15.00/hr
FINANCE COSTS	$10.00/hr
TOTAL	$37.75/HR.

SURPRISED?? So was I! I had no idea that my pursuit was so pricey. If you ignore depreciation and finance, you get an operating cost of about $12 per hour. That is about as good as it gets. It's no wonder the few people who rent aircraft at $40/hr have to charge as much as they do. And it's no wonder also that the cost keeps a lot of young but interested folks out of the market. They have higher priorities for their after tax dollars. One of the ways to get the numbers down is building your own, but building is not for everyone. Another way to defray costs is enter into joint/shared ownership with some like minded buddies,.....a true test of friendship. Regardless of the arrangement the costs of flying are still there...almost $40/hour.

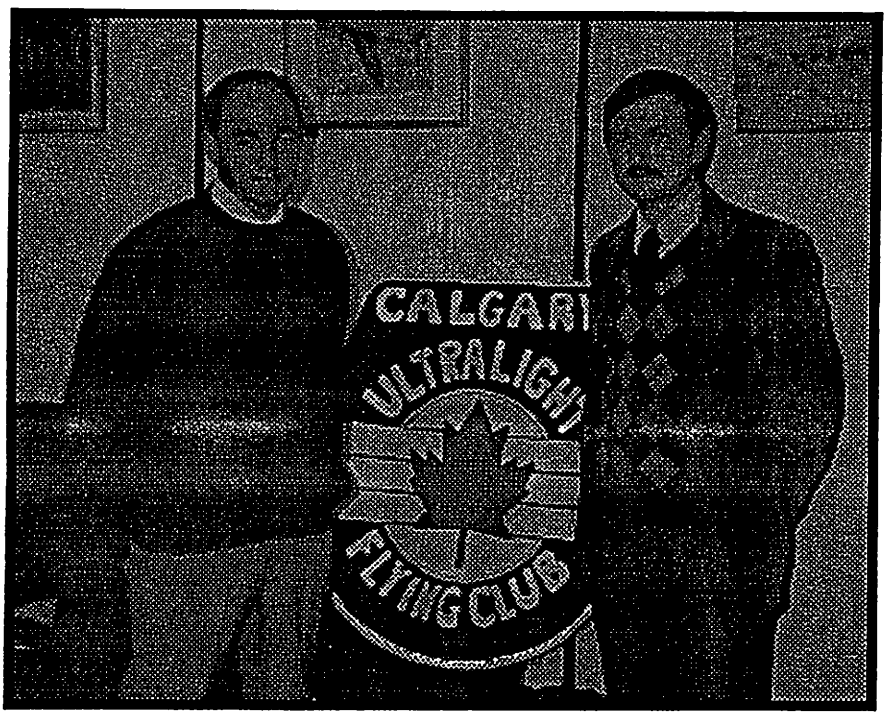
But I felt I must have missed something. Surely it couldn't cost nearly forty bucks an hour to fly an ultralight. I double checked my figures and could not find any obvious errors. Something else must be at work here, and there is another side to the whole issue. The mathematics versus the metaphysics.

THE METAPHYSICS OF OWNERSHIP

The cold hard mathematics of it all is not too comforting...they do not lie, but neither do they tell the whole truth. While it's true that the total cost is nearly $40/hr., we need to compare this...to put it in perspective..with some other things that one might do for a hobby/recreation, things like golfing, skiing, or boating, or motor-homing. If you apply the same accounting principles to these activities you will also get figures in the $30 to $40/hr range..or even higher. ...And, at life's end you won't be able to reflect back with as much satisfaction on a particular golf game compared to a particular morning or evening flight when the light was just so, the air smooth, the perspective awesome, the ..... For me, the post-flight satisfaction and euphoria that overcomes me is second to nothing...well maybe something, but this is an aviation newsletter.

I guess all of this underscores the need to measure the benefits as well as the costs when comparing the value of things. The problem is that the costs are easily quantified, while the benefits are intangible and not easily measured. How do you attach a value to the skills, and knowledge that you obtained thru flying, and that you apply elsewhere in your life? How do you attach value to the extent to which aviation enriches your life? You cannot BUY, SELL OR TRADE the things flying brings into your life.

So, the next time some well meaning friend asks you how you can justify the expense of flying, just reply, "I LIKE TO FLY", ...next question?



Moe Balle and Wayne Woloshyn were guests at April meeting.

Transport Canada / Transports Canada

PILOT FITNESS CHECKLIST

"Am I Really Fit To Fly?"

I llness: Do I have any symptoms that may restrict my performance? (Fever, sore throat or ears, etc.)

Medication: Am I cleared by a physician to take prescription or over-the-counter drugs? (Aspirin, cold tablets, cough medicine, etc.)

S tress: Is my judgement impaired by emotional or other problems? (Family, friends or pressure to complete this flight.)

Alcohol: Am I feeling any hang-over effects?

Fatigue: Am I rested and unhurried?

Eating: Have I eaten properly in the past 4 - 6 hours? (Not just coffee.)

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