Skywriter

Monthly Newsletter of the Calgary Ultralight Flying Club

November 1990

View From Above

by Paul Hemingson

I missed the last meeting. Thanks to Gord Keegan for lining up a program and conducting the October meeting. Gord has also lined up a presentation from the STARS Air Ambulance group for the November meeting. These guys and gals offer a valuable service to the greater Calgary area and I am looking forward to having the Club help them continue this service.

It is Election time again. Our Club Bylaws require that we nominate and elect a new VP and Secretary. The Elections will be held at the December meeting. Please give serious consideration to nominating/running for these positions. It is not a lot of work, but it does require some dedication. The personal rewards of growth and awareness outweigh the downside. The life and health of the Club depends on your participation and working with the current executive team. It takes people with desire to make things happen. And while happy people don't make history, we do have fun. If you're wanting and willing to become more involved please step forward and offer your name. The next year promises to be exciting with the crystallizing of new regulations and our higher profile as a pacesetter for providing ultralight pilots with information for safe and responsible flight. New people, with new ideas will ensure that the momentum of the Club is sustained.

Jim Creasser has taken on the task of organizing our participation in the annual November Hobby show. With thousands of people filing by our booth it should be a rewarding event for your involvement.

I always like checking my mailbox at the end of the lane. I never know what to expect. Earlier this month I found a heavy box from Transport Canada. I wondered what it could possibly be. A Gold Plaque in recognition of my efforts promoting safety? Unlikely. A detailed list of infractions I have commited over the past few years? Possible. A summons to appear before the Gods of the Air? A collection of letters from angry readers in response to my articles in CULN, requesting a stop order on my word processor?

Curiosity got the best of me. It was a copy of the AIP, complete with inserts. I spent some time updating it....it contains an incredible amount of information. Anyone who knows this book has to be considered a Wingnut. Those souls encumbered with the knowledge of this manual almost need a lawyer in the right seat to interpret all the regs. We ultralighters lead a simple life. On the serious side, this manual is an excellent source of information for safe piloting in Canada and I thank some anonymous soul for sending it to me.

When you get a chance, flip thru it. It is well organized and makes for good bedtime reading.

The cooler denser air of winter will soon be here. Great performance, and an extra bark to your Rotax. Get your machines ready now.

On The Horizon

November 17&18 - Hobby show at the Roundup Centre. CUFC has a booth, so come out and support your organization.

December 5 - Election night at CUFC. The VP and Secretary positions are up for grabs.

January 2 - First meeting of 1991 - your 1991 dues will be payable at this meeting.

Christmas Party

The annual CUFC Christmas Party is on Saturday, December 8, 1990

Advance ticket sales only!
Tickets: $5.00 per head

Contact Gord Tebbitt to buy tickets

Ultralighting in Britain

by Ken Eastham

Ultralight aircraft are now being designed to fly faster, fly longer distances, carry more weight ... I wonder how much longer it will be before such stringent airworthiness regulations as they have in the UK will be introduced into Canada. I shall give a brief report on the type of regulations a manufacturer has to conform to in the UK.

Since 1984, all new ultralights have had to meet stringent airworthiness rules known as the British Civil Airworthiness Requirements - Section S. These requirements take the form of a 56 page document which has more than 160 individual sections detailing the standards to which the aircraft must be constructed and test flown. Before anyone can set up making ultralights or, indeed, even parts for ultralgihts, he must first become CAA approved. This is a process whereby inspectors visit your premises and investigate your facilities, your procedures, your personnel and qualifications. Much emphasis is placed on inspection and test methods to ensure that only the right quality materials are used and that, when parts are made they are all the same as, and just as strong as, those originally tested.

After a company has received approval, it can then set up and make ultralgihts, and has to get what is known as Type Approval on actual aircraft they wish to make. This is a long and complicated job involving a proving test on each separate item used on the aircraft, followed by an extensive testing of the whole aircraft. This includes multiple load tests in which the structure is piled high with weights, such as sand bags, to simulate the likely loads to be found in service. To cater for wear and tear and unusual circumstances, all the figures have safety factors added to them. This means, for instance, that the wing struts, wires, of the aircraft must be proven capable of withstanding a load 12 times that which a fully loaded aircraft would experience in level flight. During this test work, detailed records have to be kept and from this comes the information the pilot requires to be able to operate safely, such as climb rate, take-off distance and other performance figures.

Once Type Approval has been granted, the design is "fixed" and no changes

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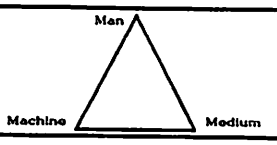
Meetings of the Calgary Ultralight Flying Club are held the first Wednesday of every month at the R.C.A.F. Association, 110 - 7220 Fisher Street S.E., Calgary at 7:30 PM.

Safety Corner

by Paul Hemingson



Non-constructive Tube Bending

One of the first things you notice about a crashed ultralight is the bent tubing. Double Compound, Open Fracture, Triple Recumbent Bent Tubing. What a tangled mess we leave when proven procedure is misperceived.

For pilots, the most vulnerable few moments occur in the transition phase. Transitioning from ground to air...or air to ground. Unsuccessfully making this transition seems to be a common problem, in the past, the present and the future.

Scan any accident statistics and check off those accidents that happened in the landing or take-off phase. Almost all of them. Any fool can fly an airplane acceptably. The real test of safe pilotage is leaving and returning to the ground. The accident reports verify that something other than the aircraft is responsible. The closest you can get to some "honest accidents" are the gear ailure type. But even some of these are debatable. Many gear failures are the result of history of gear strain. Something else is at work here. If you think about this long enough and hard enough the Nirvana of truth emerges that our technique is not as good as we think.

It is easy (and common) to blame the aircraft, or the conditions, or the weather, or something else. Aircraft are mainly designed for their prime element...air. But a lot of thought also goes into making them good ground handlers, and forgiving as possible in the landing and take-off roll. So that leaves pilot error....their must be something wrong with our technique, or our attitude, or our perceptions of risk.

Why is it that some pilots can put in hundreds of hours and never scratch a plane, and other equally intelligent folks seem prone to more than their "fair share" of incidents? What is the difference? What separates the Lucky from the Unlucky? The answer is, we are the makers of our own destiny. You make your own Luck!

.his months article deals with the landing and take-off phase of flight. Since I have a long history and experience with making bad landings I am qualified to discuss this topic. Along the way I have learned a few things, and maybe I can pass on a few ideas to save you some pain, $$$, and the angst of contemplative hours replacing bent tubing.

Two caveats. Firstly, every machine has its own personality, its own quirks, and although I will try to keep the tips universal, modify them with your own experience and type of machine. Secondly, I am confining my comments to Taildraggers.

The whole notion of safe piloting essentially revolves around the concept of risk management. Sage pilots and Instructors have condensed the wisdom of risk management into a few choice words when they say "a safe landing begins with the approach". There is a lot of wisdom hiding within their retort. The problem with these gems of wisdom is that they are only obvious to tiie already experienced pilot. Maybe some elaboration is in order.

The Risk Management process consists of a number of discrete steps that our brains sometimes intuitively consider, and sometimes intuitively overide. Basically there are five steps to the process:

1. Identify the major hazards.

2. Evaluate the consequences.

3. Quantify the Probability of some untoward event happening.

4. Comparison of the Risks (consequences and probabilities) versus the threshold of your acceptability.

5. Take measures to reduce the risks of any hazards.

Let us see how these fit with flying; for example the landing. Looking at the process, its easy to see that the first weak link is that all the hazards are not identified. For example, on the approach if you fail to identify the strength, or the direction of the wind you are already setting yourself up for a little excitement. Or, maybe it is assumed that the grass is short, or that the snow is soft, or that no drifts are present. These factors become all the more important in determining whether you might do a three point stall landing or a wheel landing. Assumptions are only as good as their validity. Assumptions can prevent you from identifying a hazard. Check your mental process to ensure that the assumptions you are making have a reasonable likelihood of being true.

The second step is to evaluate the consequences. Simply put this might mean that if a crosswind is blowing, plan your final approach accordingly. Expect to hold one wing low to compensate for drift. Anticipate the conditions for what they are. If you feel the odds are against you, or that it will challenge your skill level, then make an alternate plan. For instance, this might mean choosing a runway oriented into wind, or selecting an alternate landing field. Congratulations, you have just completed steps three thru five of risk management process. Just like the man said, "a safe landing begins with the approach"....this is what he meant. He also knows that a plane is not safely landed until it is tied down.

On short final and flare keep your eyes well ahead and watch for the traditional landing clues. For example, the widening and flattening of the ground indicating your wheels are almost touching. Remember too that a flare out that begins too early, or too late results in the same thing. Bounce, bounce, bouncity-bounce. Be prepared to add power to smooth this out or go around. Don't get trapped into thinking that you absolutely have to salvage a landing from a botched flare. A quick glance at the windsock will also indicate the gustiness and confirm the wind direction. These clues are simply feedback that your brain processes, and then readies itself for any imminent control input required. If your brain is ignoring the feedback, it is ignoring vital information and it is time to recondition yourself to be more receptive to the feedback.

A prudent pilot applies the same kind of thinking to the take-off procedure. He begins with identification of the hazards. Again, if a crosswind is blowing, he anticipates its effects, the consequences, and plans accordingly. Seems simple enough, but the accident record of any month of any year shows that considerable number of pilots ignore the process. Forewarned is forearmed, and it behooves all of us to consciously think thru what actions we might need or want to take before its too late. Getting "behind" the airplane quickly narrows your choice of options.

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(Safety - continued from page 3)
I have noticed that some ultralight pilots conduct every take-off as if they were trying to match the published book or spec figures....searching for that illusive 1000 fpm climb rate. This is a difficult task, especially here in Western Canada where the density altitude is sometimes six or seven thousand feed. In many cases the scenario is....line up haphazardly, forget the checks, firewall the throttle, and yank on the stick and climbout just above the stall. A perfect setup for disaster. With minimal speed on the take-off roll and lift-off, the visibility is restricted, the aircraft drifts off the center line, the ailerons are minimally effective, and add a little gust of wind and we have another statistic. Or, consider a climb-out just above stall. With the light weight of ultralights you do not have much inertia if the engine fails. And with the high drag of our machines, the speed decays very quickly. I guess if you have to conduct a forced landing, there is not a better machine to do it in than an ultralight. The chance of success of forced landings is inversely proportinal to the weight of the machine.

Still, when it comes to take-offs its better to go by the book here and impress onlookers with your professionalism, not your climb angle. Keep a little extra speed, bring the tail up nice for good visibility. I know ultralights pop off the ground easily, but its seldom necessary to coax them off the ground too early, by pulling backstick. I think its better to nose over slightly in ground effect and pick up a tad of speed before climbing out. Climb out at stallspeed plus some safe factor. There is no big advantage in rushing things....you're not going anywhere very fast in an ultralight.

In summary, the key to safe piloting is identifying the hazards and taking the appropriate action to evaluate, anticipate, and minimize the risks. I have just scratched the surface here in terms of identifying hazards. That is your job to do given the conditions, given your skills, and the capabilities of your machine. Safe flying is largely wrapped up with anticipating events, and hence reducing the number of surprizes. This is what the same sage pilots and instructor mean when they say "stay ahead of the airplane".

Fly Like The Experts

by Buzz Mawdsley

Most expert pilots, test pilots, airshow pilots, astronauts, or maybe someone you consider an expert - usually have some very simple philosophy behind everything they do in the air. They have an attitude about their aircraft, themselves and their flying that has made them successful. These pilots have learned to overcome most shortcomings. I have always believed that ultralights and gyros are just as safe as any other aircraft, as long as this advice is followed.

> *"Know your aircraft, know it well. Know it's limits and above all, know your own limits."*
>
> *Bob Hover - Airshow pilot*

How many accidents have you heard about where the "pilot" tried to do something he was never trained for? How many fixed wing pilots have been killed because they thought a gyro "flys just like an airplane"?

Knowing your aircraft is also knowing that it is airworthy. Twenty percent of all general aviation accidents are the result of poor preflight preparation. These pilots, for all purposes, crashed before they took off.

> *"We're all accident prone. Flying does present hazards. If your emergency training is up to date, you can survive an emergency."*
>
> *Tony Levier - Test Pilot*

My first flight away from the runway resulted in a dead-stick landing in a field. Although I hadn't actually practised dead-stick landings (a mistake), the short field I was learning on usually required full idle landings when trying to get maximum time up and down the runways, and my first dead-stick landing was successful. Since then I continually prectise and fly only where I can land, after several emergency landings, nothing damaged and no injuries.

Anticipate problems and resist tendencies towards complacency. Always be looking for a place to land. Watch how you talk to yourself. If you find yourself getting lazy or slugish at the controls, or saying things to yourself like, "Guess there isn't much traffic today". Remember this: Always be aware of your surroundings, the air traffic, the sound of your engine, your altitude, everything.

> *"Compacency is one of the major causes of accidents. No matter how well things are going, something can always go wrong."*
>
> *Art Schol - Airshow performer*

Plan ahead, look ahead, think ahead! Don't try to take off from too short a field, where one little burp from your engine would put you into the trees or wires. Don't start a cross country without checking the weather for your route.

> *"Stay up on the edge of your seat."*
>
> *Scott Crossfield - Test Pilot*

Know your aircraft. Gain experience slowly and completely. Don't try something when you don't know positively what the outcome will be. Anticipate manouvers before you have to do them, anticipate problems before they happen. Listen to and feel your aircraft, know what's normal and know what's not.

> *"Always leave yourself a way out."*
>
> *Chuck Yeager - Test Pilot*

Successful pilots don't have anything to prove to others. "The only thing to prove is something that is in doubt". Don't put yourself into positions where it will take your "superior skill" to save you. What if you are just a little bit off that day? We are never as good as we think we are.

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(Britain - continued from page 2)
can be made to it without yet another complicated and costly procedure. As if this were not enough, the CAA then demands that each aircraft be issued with a permit to test fly, which allows flight solely to prove that the machine is safe prior to it being issued with its official permit to fly.

Because of the British requirements I believe that the British ultralight is better made and safer to fly, but, is it worth it?

Jim's Place

by Jim Creasser

Arlington

All of you have heard of Arlington, Washington. Some of you have visited there, some in July during the Northwest EAA fly-in convention. By Oshkosh standards it is not a large fly-in, but much closer and earier to reach from Calgary.

I have attended the fly-in several times over the last seven years. This year I didn't go, as Oshkosh was first on my list. I was, however, in the area a few weeks ago so I dropped in to say hello to Jim Scott.

A little history here. Jim Scott, of Eastside Ultralights, started into ultralights in 1980 as a Weedhopper dealer. Shortley thereafter, he began fitting Rotax engines to weedhoppers and then building his own design, the Cadet Jr. Similar to, but much better than the original. For those of you not familiar with the Weedhopper, the designer, John Chotia, produced his own engine. It was a single cylinder 2-stroke called what else but the Chotia engine. He used some existing parts such as VW piston and rod and built other parts, ending up with an engine that barely had enought power to get the Weedhopper off the ground. Along came Jim Scott and hung a Rotax 277 out in front and improved the takeoff characteristics dramatically.

The Scott family jumped into the ultralight business all the way, they found a need and fullfilled it. And a first class job they did. Once aircraft were sold, these customers wanted somewhere to keep these machines, so the Scotts built a row of T-hangars. These same owners needed to learn to fly so the Scotts came through with machine and teacher and have given training to more than 5000 students. As more and more customers came along, more aircraft were sold, more Rotax conversions were done, more T-hangars built, more students trained, etc.

There are now 68 T-hangar spaces rented at $63.00 per month, no vacancies at this time. Accessories were needed by his customers so he began to order in as needed, but finally had to stock the most asked for items. Now he operates a medium sized mailorder business for ultralight parts, accessories, Rôtax parts, etc. Now I have a 176 page catalogue full of everything one could want or need for an ultralight or its owner/pilot.

Some of the early customers began to need engine work and to date more than 650 engines have been rebuilt, not to mention tune-ups, etc.

Back around 1985 the Scotts found themselves so busy that they had to suspend their manufacturing business (the Cadet Jr.) and concentrate on the rest of the fun things. An underground fuel tank with electric pump was installed with mixed fuel available, self serve to the customers. A building was built at the far side of the Arlington airport with an agreement worked out with the city (airport owner) to allow a separate circuit for ultralights. The building was to house Eastside's business as well as a couple of other manufacturers.

I feel the ultralight community in the Pacific Northwest is very lucky indeed to have the Scott family in their area, and the facilities made available to them at the Arlington airport.
I look forward to attending the fly-in next July (approximately the middle of the month) and renewing my aquaintance with Jim Scott.

If anyone is interested in pursuing the Eastside catalogue please call me. They take phone orders on credit cards and with UPS delivery it should work well. Their prices are generally lower than other similar companies. So why not give some business to those that have bettered the sport for all.

Eastside Ultralight Inc., phone 206-435-3737.

Elections

Don't forget elections for VP and Secretary are being held at the December meeting. Here's your chance to help out!

(Experts - continued from page 4)
When you think about doing something, flying in bad weather, low over trees or houses, or whatever, pay attention to your body language. Safe decisions lead to safe feelings. Unsafe decisions cause butterflies, sweaty palms and dry throats. Listen to your gut reaction.

"Keep your brain a couple of steps ahead of your aircraft."

Neil Armstrong - Astronaut

Eighty percent of all general aviation accidents are pilot error. We are the most dangerous component in the aircraft. Most of these accidents are "thinking" errors, not flying technique errors. A pilot doesn't just control the aircraft, he has to control himself too.

"A superior pilot uses his superior judgement to avoid those situations which require the use of his superior skill."

Frank Borman - Astronaut

We all know that we should preflight our aircraft, right? We should always look a little closer at the critical components, the ones that can cause the most harm if they fail. Since we, the pilots, are the most critical component, we deserve extra close scrutiny. Therefore, here is a preflight checklist for you, the pilot.

1. Check for: illness, medication, stress, alcohol, fatigue, emotion. Don't fly if you contain any of these.

2. Shortcuts - off.

3. Safety - on.

4. Complacency - off.

5. Planning - on.

6. Good judgement - on

7. Proficiency - on

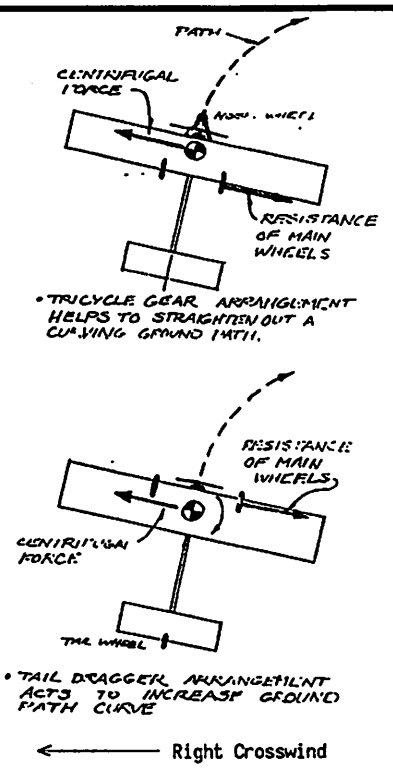
Expert pilots are experts because they think like experts, not because they do fancy manouvers in the air. If you want to fly like an expert, and have the maximum chance of surviving to talk about it, you have to think like the experts. Remember, flying has no room for carelessness or neglect.

Thanks

Many thanks to Buzz and Ken for writing articles for this month's newsletter. Well done!

I hope others will be encouraged to write down some thoughts for future newsletters.

- The Editor



This diagram illustrates the forces on both a tricycle geared airplane and a tail dragger taking off in a right crosswind.

The wind against the tail causes the aircraft to tend toward a curved path into the wind. This curved path in turn causes a centrifugal force acting in the opposite direction at the C of G. In the trike the C of G is ahead of the main gear so this force tends to correct the tendency to turn into the wind. In a taildragger the C of G is aft of the main gear so the centrifugal force adds to the tendency to turn into the wind.

This illustrates why a taildragger is more prone to groundloop in a crosswind.

- The Editor

Classified

ABC Ballistic Chute - never used, hermetically sealed, excellent; Ivo Prop - updated 3-blade, ground adjustable, 60", composite blades, L.H. tractor or R.H. pusher, new. Offers. Paul Hemingson 931-2363.

Beaver RX-550 - 2 place, Rotax 503, pitot airspeed, ALT, TACH, EGT, CHT, Hobbs, brakes, wheel pants, custom paint, ballistic chute, wing covers, less than 200 hrs., always hangared, never damaged. First $10,000. offer flies it away. Call Gord Keegan, 238-0177.

Chinook 2-place - 1987, 503 single carb, Elec. start, dual inst., new (2 hrs TT), sacrifice - offers. Wayne Winters 936-5767.

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

Goldwing 1986 - 60 hrs TT, instruments, brakes, BRS chute, flies great, Cuyunna 430. Romeo 204-878-2744.

Hiperlight SNS-8 - single place, S/N 1, factory built, TTAF 45 hrs, new Rotax 377, new R.P.M. adjustable prop with spinner, new candy apple paint, instruments, brakes. Jim Creasser 226-0180.

Quicksilver - 1984, single-place, 440 Cyuna engine, inst., long range seat tank, never flown, $8500 invested, sell for $4000. Wayne Winters 936-5767.

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.

72" Prop - maple with right-hand 40 pitch. Never used and undrilled. $150. Bill Clark 931-3143.

Rotax 503 - Dual carbs, electric starter, TT 130, excellent condition. $1650. 1 pair Armstrong 800 x 6 new tires and tubes, $125. Hush-A-Com intercom and headsets, $250. Airpath panel mount compass, $35. Gary Knier 281-3577.