July 2002

DOWNWIND

THE OFFICIAL NEWSLETTER OF THE MONTREAL SOARING COUNCIL

Congratulations!

Toby Gilsig flew his first solo on Friday, July 12. He sent this message to all concerned:

"Thanks to all the instructors who flew with me, and helped me prepare to fly this solo with confidence, including Marc Lussier, Hiller, Joe, Caroll, Roger, Terry, Réal, Hicham, Dave, Neil, Gordie, George, Marc Sauriol, Marc Gohier, Simon and Bill (and anyone I forgot!). Thanks also to the tow pilots and the many other people who make the flying possible. I will be travelling for a few days, and will be happy to set up a beer list next time I'm at the field." ✣

Editor's Note: There were other solo's in July. I will get their details for the next issue.

IN THIS ISSUE

From The Last Instructors' Meeting

By the Instructors' Panel

Care of Aircraft

At the last instructors' meeting there was more discussion about the care of aircraft that are removed from the hangar but not for the purpose of flying. For example, tow planes and gliders may be removed so that other gliders can be wheeled out and made ready for flight. It was decided that all non-flying gliders should be returned to the safety of the hangar before members go to the flight line. The idea is to prevent any damage that may be caused by sudden wind increases or bad weather. The tow planes may be left outside if the brakes are on, the flaps are left up, and they face into wind. Strong winds may require the tow planes to be returned to the hangar, or tied down outside. However, it is unlikely that any flying will be done if the weather gets that bad! Over the past few weeks this policy has been put into action very successfully so keep up the good work. We have a very expensive fleet of aircraft, of which we can be proud. Let's take the best possible care of them. ✣

Glider Daily Inspections

Adapted from website (with no author name)
http://www.miskin.demon.co.uk/gliding/x_daily_inspection.htm

The Daily Inspection, or DI, is a rigorous and important contribution to gliding safety. Various checklists exist on how to perform a DI, but each pilot tends to have his or her own style - the common denominator being that it covers all parts of the glider in a methodical fashion. Once you are familiar with the DI process, you should do it the same way for all gliders.

The DI usually starts by removing the canopy cover from the glider. The cover should be carefully folded and placed in the glider stowage compartment.

Check the glider DI book is to see if any problems were reported when it last flew. Look especially for any maintenance work that was recommended or started or (ideally) completed. At this stage you might find that the glider is not serviceable for flight, and the inspection need not proceed any further. Alternatively, it may alert you to any repairs that need special attention on the ground or in the first flight. If any safety-related repair was done, the first flight would normally be a check-flight made by an instructor alone.

Check all the cockpit controls for full and free movement and the effectiveness of their operation. Flight control surfaces must be connected and move in the correct sense. Do a positive control check of the primary control surfaces, as follows: a helper should hold each control surface steady while the inspector tries to move it with the appropriate control. Use flat hands on the control surfaces, especially if they are fabric-covered. This makes sure that none of the control linkages (cables or rods) are loose or broken. All other controls should also be checked, e.g. the trim lever moves the trim tab in the correct sense, where applicable. Now would be a good time to check the rudder pedal adjustment mechanism.

Check Out This Website

http://yarchive.net/air/sailplane_flying.html

All about thermaling!

Check for any ballast that may be fitted, bearing in mind who will be flying the glider first. Make sure that any ballast carried is secure. Unwanted materials like stones, mud, or grass, should be removed at this time.

Carefully check all the straps for any fraying or other damage. Make sure that they are securely attached to the airframe and that the adjustments work and do not slip. Check the buckle to make sure it opens and closes correctly and holds the straps securely.

If the glider has been de-rigged, the connections at the rigging points (flight controls, airbrakes, flaps) must be double-checked by a second person who is familiar with the aircraft. This second check must be signed off in the DI book. Have a good look around for any loose objects in the cockpit or in the open space behind the seat.

Get the correct battery from the charger bench and fit it into the glider. Check all instruments for serviceability (as far as possible) and security. Loose or cracked glass on a pressure instrument like the altimeter causes leaks that make the instrument read incorrectly. Switch on the main powered items such as the radio and the audio variometer to make sure that the battery is connected and functioning and that the instruments display the correct indications.

Check the canopy for any cracks or holes or scratches including the hinges and emergency release, and any locking pins and telltale wire.

If the airbrakes will not stay open, use the straps to hold them in place or get a helper to hold them open when you move on to the external inspection. Walk carefully around the glider in one pass to check the glider structure for any damage and any items that may require attention. This inspection includes items like the tires and wheels, wing joint sealing tape, the fuselage, tail components and wings above and below. Check for signs of any debris in the airbrake boxes, and check all hinges and fasteners for lock nuts and safety pins.

Check the cable release mechanism during the DI. One person attaches the rope and then pulls very hard to make sure it is firmly in place, then a second person pulls the release handle to make sure the rope releases easily.

Finally, complete the entry in the DI book and sign for the inspection. Enter any minor defects that require attention but which do not prevent the aircraft from flying. ✣

Something New From The Met' Man

While listening to Ed Cowell giving the weather forecast on Montreal's CJAD recently I heard a meteorological term that was completely new to me. Always eager to learn something new about the weather, I contacted Ed and asked if he would write a brief article for Downwind, to which he gladly agreed. Here's Ed's article. DC

Mesoscale Convective Complexes

By CJAD Weather Forecaster Ed Cowell

Pilots and weather buffs in general have undoubtedly noticed, while watching TV weather broadcasts or looking at enhanced weather satellite shots on the 'web', large rounded areas of convective cloud typically over the U.S. Midwest and Southern Ontario.

Mesoscale Convective Complexes, or MCCs, were only discovered in the early eighties after improvements in satellite and radar technology allowed researchers to study a phenomenon that we now know occurs on five continents.

MCCs are clusters of thunderstorms that form late in the day, usually preceded by a mid-level trough. Instead of dissipating after sunset, these clusters grow much larger during the evening as a strong low-level jet forms at around one thousand feet, just above an inversion, feeding warm, moist air into the complex. These storms, and the low-level jet, reach their peak around midnight, often covering several states and giving large quantities of rain, thunderstorms and occasional tornadoes.

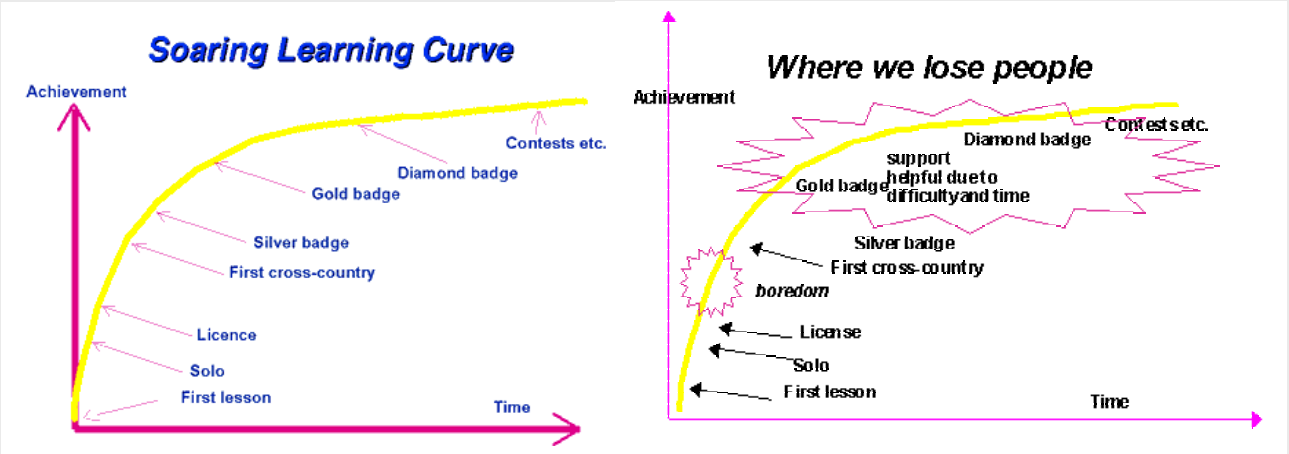
MCCs begin to dissipate with the next day's sunrise, which breaks the inversion and cuts off the low-level jet, similar to cutting the umbilical cord that has been feeding the storm.

While these spectacular storm systems cause grief to farmers and others on the ground, with deaths occurring in one out of four events, aviation is also affected with extensive rerouting due to the thunderstorms and low-level shear.

So the next time you see that large colourful area on your favourite TV weather channel or computer monitor, you can thank your lucky stars you're not under it. ❖

Where We Lose People

Here's something I found on a gliding web site some time ago. At the time I thought, "How true!" Does anyone have any ideas on the subject of glider pilot attrition? ❖



From the President

By Terry Beasley

First, let me express my thanks to all those who helped to make the 2002 Canadian National Soaring Championships the success that it was. Those Nationals are now history, and we can get back to normal.

I hope that none of our members begrudged the time and effort that went into holding the Nationals at Hawkesbury. It should be seen as an opportunity to see some of Canada's better pilots showing what performances can be achieved in various conditions. Anyone who was there can assure you that we certainly had varying conditions, ranging from 'not worth opening the hangar' up to 'really excellent.' (The latter being one day only!)

I must mention a highlight at the final closing dinner and awards ceremony. Our own Bill Roach, with some assistants, prepared a most impressive video slide presentation that covered the contest. It was very professionally done and was well received by all those present.

MSC has agreed to participate on a regular schedule for holding the Nationals, so we can expect our next turn will be in four or five years' time. Certainly we will have more notice next time and will have the advantage of comparatively recent experience, which will make the task simpler. We will be reviewing our own performance for the 2002 event and will try to identify those areas that could have been done better. We will then try and document the whole thing to help make the task easier for those who make up the team on the next occasion.

As I said earlier, we can now get back to normal and try and get lots of flying in for the rest of the all too short season. Come early, fly safely, stay late, and fly often! ❖

WANTED

Please spend a few moments trying to think of one single thing that you believe would improve your enjoyment of our club. E-mail to Terry Beasley.

Quiz of the Month

By Dave Clark

Here's the answer to last month's quiz. Just as a reminder I will repeat the question. A single seat glider has the following weight and balance data:

Maximum permissible gross weight 715 LB.

C of G limits 90 to 96 inches aft of the datum.

The pilot sits 70 in. aft of the C of G datum. Before a recent modification, the glider weight empty was 500 lb. and the moment was 49,000 in. lb. The modification to the rear fuselage added 10 lb. to the weight, at a point 140 in. aft of the C of G datum. What will be the maximum pilot weight after the repair in order to keep the C of G within limits?

Here's the data displayed in a table.

Item	Weight (lb)	Arm (in)	Moment (lb in)
Glider	500	98	49,000
Mod	10	140	1400
TOTAL	510	98.82	50,400

When the max permitted cockpit load is applied, the C of G of the glider will be at the forward limit. Therefore, the Arm of the cockpit load will be 20 in. (90 - 70). From the table above, the C of G of the glider after the mod is at 98.82 in.

Taking moments about the forward C of G gives 510 x 8.82 = 20 x Max cockpit load. Thus, Max cockpit load = 224 lb. At this cockpit load, Max AUW will be734 lb. This exceeds permitted AUW by 19 lb. So max cockpit load must be reduced by 19 lb. to205 lb. Answer = 205 lb.

The first correct answer sent by a student was from Jianguo Zhao, who has since claimed his prize of a free aerotow. Well done Zhao!

There is no quiz question this month but brush up on your air regulations for next month's quiz. ❖

Parachute Daily Inspections

By Dave Clark

Many of us strap a parachute to our backs before getting into a glider. Are you sure it is serviceable for the intended use? Here are some hints and tips on the inspection of parachutes prior to using them.

A daily inspection should be performed on all parachutes installed in aircraft that are to be flown. The inspection may be done by the person who does the glider daily inspection. The packaged parachute is inspected for external evidence of damage. You should be looking for wear or other evidence of physical abuse. The assembly should also be checked for stains, which may indicate contact with fluid of some kind. Any stain should be considered harmful until the fluid that made it is identified. It is very important that you never place a parachute on the grass beside the glider, in case that grass is damp or muddy, or worse, there is bird or animal excrement on the ground.

1) Check the leg straps for any damage and that the webbing is through the buckle correctly. (Someone may have undone the straps from the buckles and then fed them back through incorrectly).

2) Check the ripcord handle is secure in its pocket.

3) Check the cable on the ripcord and that the stop at the end of the cable by the handle is in good condition.

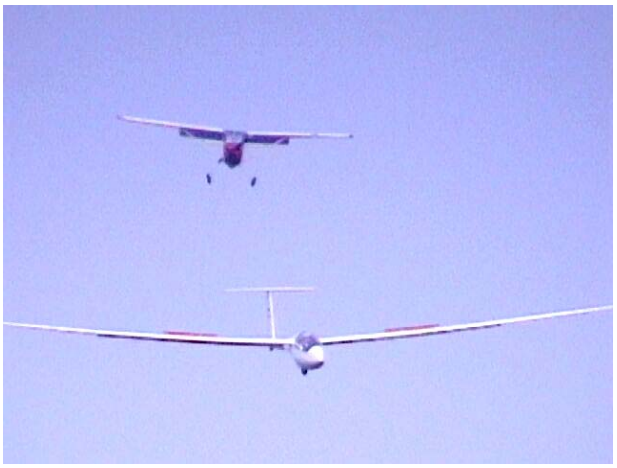
4) Open the velcro flap and make sure that the ripcord pin is not bent, the red locking thread is intact and the lead seal on the thread is present.

5) Make sure that all Velcro is in good condition.

6) Check the chest strap and buckle.

When you leave the parachute in the glider after each flight, make sure that all three buckles are connected. This will avoid the chance of breaking an instrument glass as the next pilot lifts the parachute out of the cockpit.

Last, but not least, take the time to learn how to use the parachute. There is a recognized method of deploying the 'chute and making a safe descent, including a comfortable landing. An insight into the basics of canopy control can be found on many Internet web sites. When you come in to land, keep your feet and knees tightly together, knees slightly bent and chin firmly on your chest, and always land the parachute into wind the same as the glider. ❖



Who's Towing Whom? (Thanks to Dave Wright for this photograph, taken during the Nationals.)

Tips for Line Assistants

After you have attached the tow rope to the glider, check that the cable is on and secure by applying a steady tension of about 50 lbs. to the cable (this is about the same tension as the cable will have during the aerotow). A couple of sharp tugs on the cable will not achieve the same result, not to mention the damage it will do to the skin in the area around the tow hook recess! ❖

Photos from the Nationals

Almost before the Nationals had finished, Bill Roach had put together a slide presentation of all the photographs he took during the two weeks. This was extremely well received at the final Gala Banquet and if you would like a copy of the CD-ROM, ask Bill.

My First View Of Hawkesbury

By Gordy Hicks

The following presents an anecdotal account of my first sight of the twin steeples of St. Alphonse du Liguori, Hawkesbury's RC church near the bridge to Greenville. I was ferrying the MSC's only two-seater, Pratt-Read CF-ZAN from St. Eugene to the Hawkesbury flying club field, west of the city and now the MSC site. It was a beautiful Saturday morning that 28th of June 1952, a distant fifty years ago.

It all began when John Agnew, the principal MSC founder and then president and CFI, informed me that our paved runway facilities at St-Eugene had been rented out for the 28th of June to an automobile racing club. By using markers, the runways were to be converted to a racing circuit. John explained the Saturday flying was not to be completely shut down, as L.G. Harcourt, the president of the Hawkesbury Flying Club, had invited the MSC to participate in an airshow the same day. John's plan was to have our only tow plane, a Tiger Moth, tow the Pratt-Read to Hawkesbury early Saturday morning prior to the runway changes. Once at Hawkesbury, one of our instructors with wartime aerobatics experience was to put on a demonstration. My involvement, should I want, was to fly the Pratt-Read to Hawkesbury.

Having 31h solo time and never having been cross-country, I eagerly accepted and was pleased to be so trusted. I must admit there were two earlier out-landings. The first, shortly after first solo to a field short of the runway. The second, into a field of tall corn, when the tow plane engine failed and both of us had to land straight ahead.

Jim C, our tow pilot for the day (name deleted if my memory fails me and an innocent is implicated in what was to happen), a couple of MSC members and myself opened the hangar doors at 7.30am. Time was critical as our runways were rapidly being transformed into a racing circuit, with dozens of orange-painted stout cardboard boxes functioning as route markers. Where could we take off? The racing people would not agree to temporarily move more than a few markers. Jim, in his early twenties, being the most experienced of us on the spot, was confident that he could weave a path though the markers. With the Pratt-Read, a heavy glider (almost as heavy as the Twin Astir) and the Tiger Moth's 130hp, we had set ourselves up for trouble.

Due to a crosswind we veered towards some markers and WHAP! One of the boxes got hung up in the starboard wing rigging of the Tiger. WACK! The Tiger struck another box sending it high into the air, such that on descent it put a foot-long rip in the Pratt-Read starboard wing. Did either Jim or myself have the smarts to abort the take-off or was it already too late? We eventually got airborne. The cardboard caught in Jim's rigging broke free and the Pratt-Read continued to be controllable.

With 19km to go, I expected to climb for a few hundred feet over St. Eugene, followed by a cruise altitude of 2000 ft. or more. Jim, bless him for sowing the seeds of this tale, never climbed over 400 ft. until the aforementioned twin steeples of Hawkesbury appeared on the horizon. With the goal in sight, Jim climbed to 2000ft. I released and was rewarded with an hour of good soaring to 5200ft. over what was to be our present magnificent home site.

My first cross-country was over. The flight had been so low that all I could think of was where to land should a towing problem arise. Jim later commented that the marker impacts were scary and hairy, but that he really enjoyed the subsequent very low flying. The stay at Hawkesbury was a success. No damage was done to the Tiger and the Pratt-Read fabric was mended. Everyone appreciated the fine aerobatics display. I do not remember the name of the pilot but likely it was Vernon Pope, Steve Brochocki or Ron Claudi. ❖

PRATT-READ PR-G1
Specifications

Span	54.5 ft
Area	230 sq ft
Aspect Ratio	12.9
Airfoil	GS-4, GSM, GS-1
Empty Weight	770 lb
Payload	380 lb
Gross Weight	1150 lb
Wing Loading	5 lb/sq ft

Structure: wood/fabric wings and tail, wood aft fuselage, steel tube/fabric forward fuselage

Performance

L/D Max	26 at 52 mph
Min sink	3 ft/sec at 49 mph
6 ft/sec sink at	75 mph

An Old Glider

By Terry Beasley

Last month I described a new glider, so this month let us take a look at an old glider, the Urubu Obs of the very early thirties.

Professor Georgii was head of the RRG[1] (Rhön-Rossitten Gesellschaft) an organisation established in 1926 or so with government backing for research into meteorology, pilot training and gliding competitions. The RRG contributed a great deal towards the early development of gliders and gliding. After the rise of Hitler the RRG was absorbed into the Hitler Youth organization where many of the staff of the former RRG continued to contribute their development work.

Professor Georgii was a well-known meteorologist and he wanted a fully instrumented glider to carry out meteorological studies. The result was the Urubu Obs, which was designed by Lippisch (well known for his work on tailless aircraft).

The glider was a real monster! In order to accommodate the meteorological instruments, and two observers, it had a cabin built into the fuselage below the shoulder wing, the pilot's cockpit being placed forward of the wing. To support such a payload required a large wing area so the glider had a span of 26 m with a wing area of 38 m^2 and an aspect ratio of 17.8. The empty weight was 390 kg and the maximum gross weight was 640 kg. The gull wing was braced by N struts and was fitted with very large span ailerons, split into two sections. The in-board sections were also used as camber changing flaps. The tailplane, of 5.7 m span, was braced by inverted V struts. There was a very large rudder. The fuselage was 8 m in length and was of rectangular section to provide space for the cabin; it was constructed of steel tubing, fabric covered.

Little is known of its actual use as a research aircraft other than it was used, mostly stationed at Darmstadt, although it did make an appearance at a meteorological conference held in Munich in 1934.

I have found no record of its final fate.

Footnotes:

[1]. Rhön-Rossitten is a name taken from the two major gliding sites of the day. The Rhön being the better known as it includes the Wasserkuppe. Rossitten was a gliding site on the Baltic coast that utilized some large sand dunes. Gesellschaft = company, society, or corporation.

I am indebted to Martin Simons whose excellent book 'Sailplanes, 1920-1945,' published by EQIP Werbung & Verlag GmbH, Germany, provided information used in this article. Martin Simons has written several excellent books on gliders and sailplanes and anyone interested in the history of gliders should own them. Titles and details available from Terry Beasley. ❖

What is UTC?

By Dave Clark

Coordinated Universal Time (UTC) is the international time standard. It is the current term for what was commonly referred to as Greenwich Mean Time (GMT). You may also have heard the term Zulu time, which is the same thing. Zero (0) hours UTC is midnight in Greenwich, England, which lies on the zero longitudinal meridian (the Prime Meridian). Universal time is based on a 24 hour clock, therefore, afternoon hours such as 4 p.m. UTC are expressed as 16:00 UTC (sixteen hours, zero minutes).

Since a day is 24 hours long, the world may be split into 15 degree wide longitudinal bands (360 degrees/24 hours). Each band represents one hour. As an example, Montreal is located at approximately 74 degrees West longitude, hence, local time lags UTC time by 5 hours (74/15, assuming Eastern Standard Time). In summer, the clocks move forward one hour in both North America and in the UK (although this happens about a week apart), so the difference between local times remains at 5 hours but UTC is only 4 hours different. ❖

Wheel Down and Locked?

Some tips about the Blanik landing gear

By Terry Beasley and Martin Detering

1. Retractable Wheel

The Blanik is the only glider that I know of which is designed to be capable of landing with the wheel retracted. However, when the wheel is retracted the oleo-pneumatic shock absorber is out of the circuit so if you land on rough ground you can expect damage. Naturally, the risk of damage is also increased when taking off with the gear in the retracted position.

It has also been noticed twice in recent weeks that a Blanik has been put away in the hangar with the wheel still in the retracted position. In this situation there is considerably reduced ground clearance and a greatly increased possibility of damage being incurred when putting the glider on the ground handling trolley.

What to do?

Part of your CISTRSCO check should include a visual check to see that the gear is down. In the L-13 this means the gear handle should be fully aft but with the L-23 it should be fully forward. Coloured tape has been used to mark the two positions. Green is gear down, red is gear up. When you retract the wheel after tow release, look at the handle and make sure that it is really retracted. When you do your SWAFTS check make sure that you do not try and fold the handle to the side until it has used the full longitudinal travel, then look at the handle and try to move it without unfolding it. In the
L-13, if you fold the handle prior to the lever being fully aft, you will not have locked the gear down and as soon as you touch down it will retract with an audible clunk. If it is a heavy landing you may cause damage which is very costly to repair, as a lot of riveting is involved to replace the gear suspension frame.

2. Daily Inspection of Blanik

An essential part of the Blanik DI is to check the oleo-pneumatic strut. To do this the rear seat must be removed and the clearance between the movable part of the wheel suspension and the stops must be checked. If there is no clearance, the glider is unserviceable until the strut is recharged. IT MUST NOT BE FLOWN IN THIS CONDITION.

If you don't check the gear prior to take-off, and the gear just happens to be in the retracted position, the risk of damage will be increased when taking off, because the shock absorber will be out of action. The take-off run will also be longer due to the reduced initial angle of attack.

3. Seat Replacement

Whenever you remove the bottom part of the rear seat on the L-13's to check the oleo, make sure that you replace and secure the seat in the correct position.

On the L-23, make sure that you always connect the crotch strap of the 5-point harness.

In both cases the strap buckle or seat may restrict full aft movement of the stick and, if you did not notice this on the CISTRSCO check, you may be setting yourself up for a bad day. ❖

All ready for take-off one day during the Nationals. Thanks to Martin Detering for the aerial photgraphs.