April 2003

DOWNWIND

THE OFFICIAL NEWSLETTER OF THE MONTREAL SOARING COUNCIL

Marc Lussier receives Hank Janzen Trophy 2002

By Dave Clark

The purpose of this annual award is to provide national recognition of contributions to safety by a club, a committee, or an individual. The Hank Janzen trophy was designed and donated by members of the Rideau Gliding Club in memory of Hank Janzen. Individuals, committees, and clubs are invited to submit recommendations to the Flight Training and Safety committee, which is responsible for the selection of the recipient.

The following text is taken from the application for the trophy made to SAC by the CFI:

"Marc has always been a promoter of flight safety in our club. He previously held the positions of Safety Officer, Chief Tow Pilot and is now the Deputy Chief Flying Instructor at MSC.

Marc contributed to numerous Ground School sessions, Student Refresher Clinics and safety talks.

In addition to his efforts at MSC, Marc's contributions are recognized in other clubs in the region, as well as in the Air Cadets.

Despite his busy schedule, working in several aviation-related fields, Marc's efforts are well appreciated by his instructor colleagues and his students."

Well Done, Marc! ❖

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Upper Air Sounding Details

By Bernie Palfreeman

This is the conclusion of the article on this subject that appeared in last month's Downwind.

First: Nomenclature Skew T Plot and Tephigram.

There are two ways of plotting the same atmospheric sounding data. The Skew T Plot is in customary use in the USA and the tephigram in Canada and in many other countries.

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The word 'tephigram' has its origin in the study of gas dynamics where temperature (t) and entropy (φ) are the fundamental variables.

For those familiar with thermodynamics, the tephigram is a Mollier chart for air, with the axis flipped and rotated for convenient viewing of atmospheric thermodynamics.

Now, having got that stuff out of the way, let's see what it means to us in planning a soaring day.

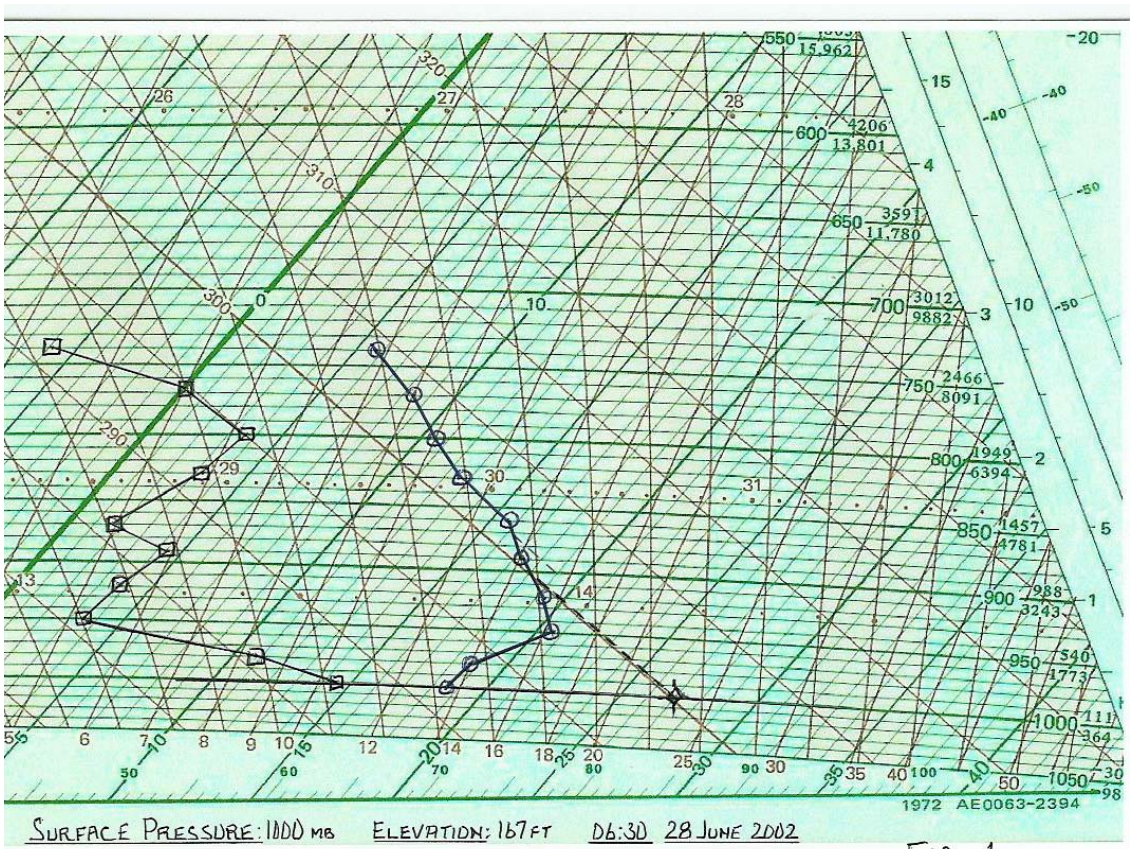

FIG. 1

Figure 1, above, shows a tephigram plot of soundings taken one day during the 2002 national contest at Hawkesbury. Note the following on this figure: the left line represents the dew point temperature from the surface to just over 8000 feet. The right line is a plot of the air temperature up to the same altitude. The predicted maximum temperature for this day was 27° C and the dotted line shows the dry adiabatic lapse from the surface, at 27°C, up to the atmospheric sounding temperature line, which meets at about 900 hPa. The roughly triangular area between these lines represents the net amount of solar heating that is transferred to the air in the turbulent boundary layer during the course of the day. One difficulty lies in predicting the maximum temperature for the day. Fortunately, Environment Canada produces excellent estimates for Tmax most of the time these days. In addition, there is a program that can be fine tuned for local conditions to provide reliable values of Tmax.

Soaring Conclusions from Fig. 1

Thermal Height: Assuming that the maximum afternoon temperature is 27°C, the thermals will rise from the surface along the dry adiabatic line

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to meet the sounding line about 900 hPa, which is about 2900 feet above the surface.

Thermal Strength: In the absence of a computer program to provide thermal strength estimates, a good rule of thumb is to take the thermal height and divide by 2000 to give the average climb rate in knots, in this case 1.5 kt. And double this for the best thermal climb, i.e. 3 kt.

Cloud Base: For the estimated of cloud base or condensation level, return to Fig. 1 and observe the dew point temperature at the surface; it shows a mixing ratio of about 10 grams of moisture per kilogram of dry air. Now follow the 10 g/kg line to meet the atmospheric temperature line. They intersect at 800 hPa, which is about 6000 ft.

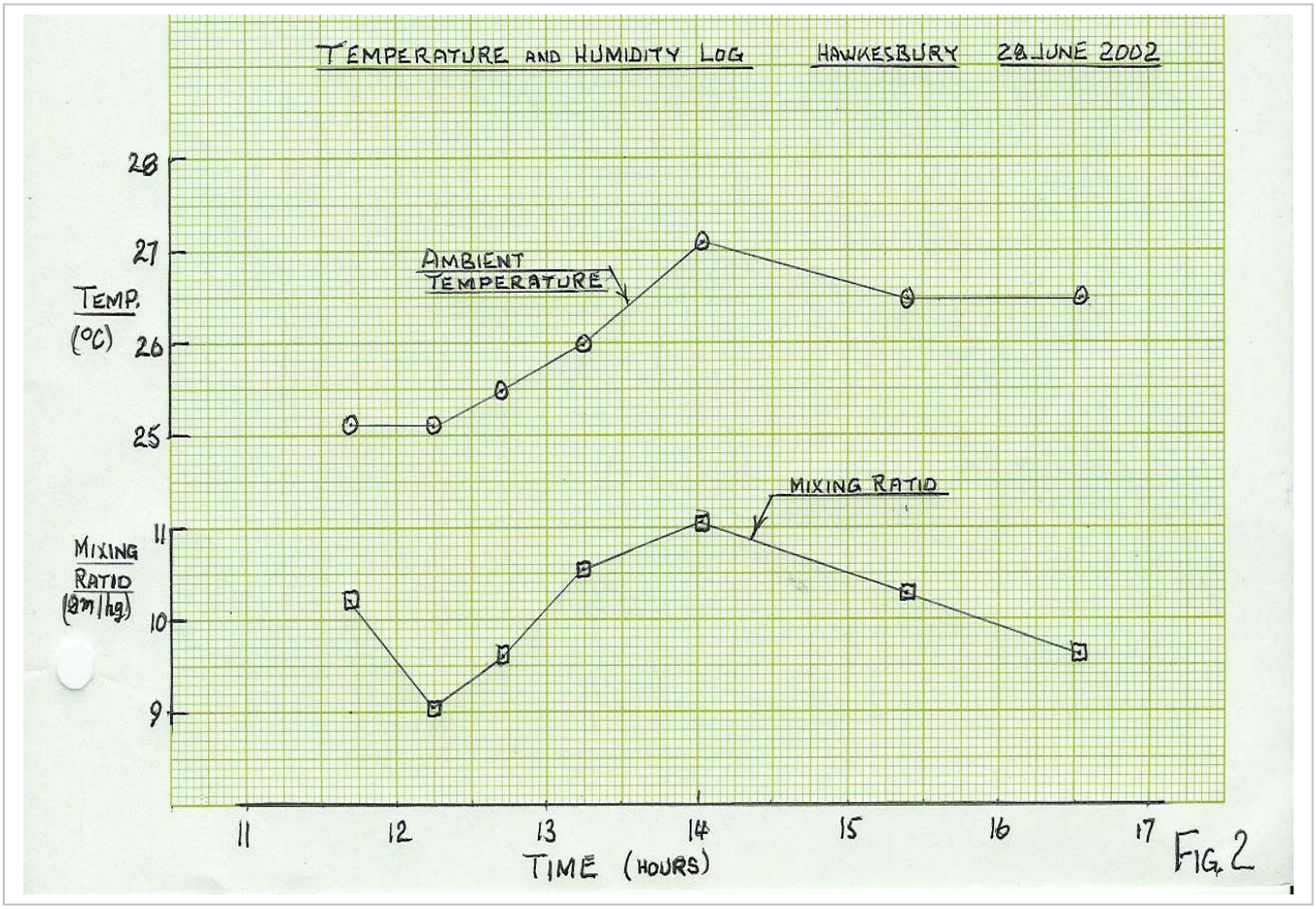
Conclusion: With the condensation level at 6000 ft. and thermal tops at 3000 ft. there will be no cumulus clouds.

Soaring Summary

Thermals to 3000–3500 feet. Climb rates: average 1.5 kt., best 3 kt. No cumulus formation.

Post Mortem

As this was a contest day, a record was kept of the variation of temperature and humidity during the soaring period. Fig. 2, below, plots the results of these readings from noon to 4:30 pm. Clearly, the predictions/assumptions for Tmax and humidity were spot on; unfortunately for the contestants, the weak thermals, blue sky and low thermal tops were also correct!



Seasonal Flight Check Reminders

By Dave Clark

Without laboring the point, here are some gentle reminders to bring with you when you take to the skies for your first flight in 2003.

PRE-FLIGHT CHECKLIST
CISTRSC (SISTERS C)

C - CONTROLS

I - INSTRUMENTS

S - SPOILERS

T - TRIM AND BALLAST

R - RELEASE

S - STRAPS

C - CANOPY

OVER THE FENCE CHECK

AIRBRAKES CLOSED AND LOCKED

INSTRUMENTS READING CORRECTLY

PRIOR TO STALLS, SPINS, ETC
CALL

C - COCKPIT

A - ALTITUDE

L - LOCATION

L - LOOKOUT

DOWNWIND CHECKS
SWAFTS

S - STRAPS TIGHT

W - WHEEL DOWN, AND WATER DUMPED

A - AIRSPEED TO LAND? (V=1.3Vs + Vw)

F - FLAPS AND TRIM SET

T – TRAFFIC

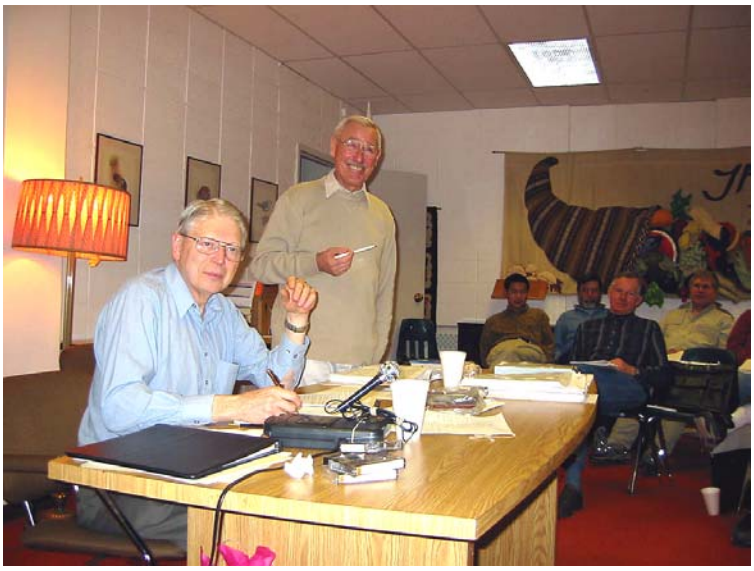
S - SPOILERS LOCATE AND CHECK

Some Pictures From The AGM

From Hicham Hobeika

Thanks be to the Lord……it's the last item on the agenda!

And these were the guys who kept us all focused and on the right track. Thanks for your good work, George and John.

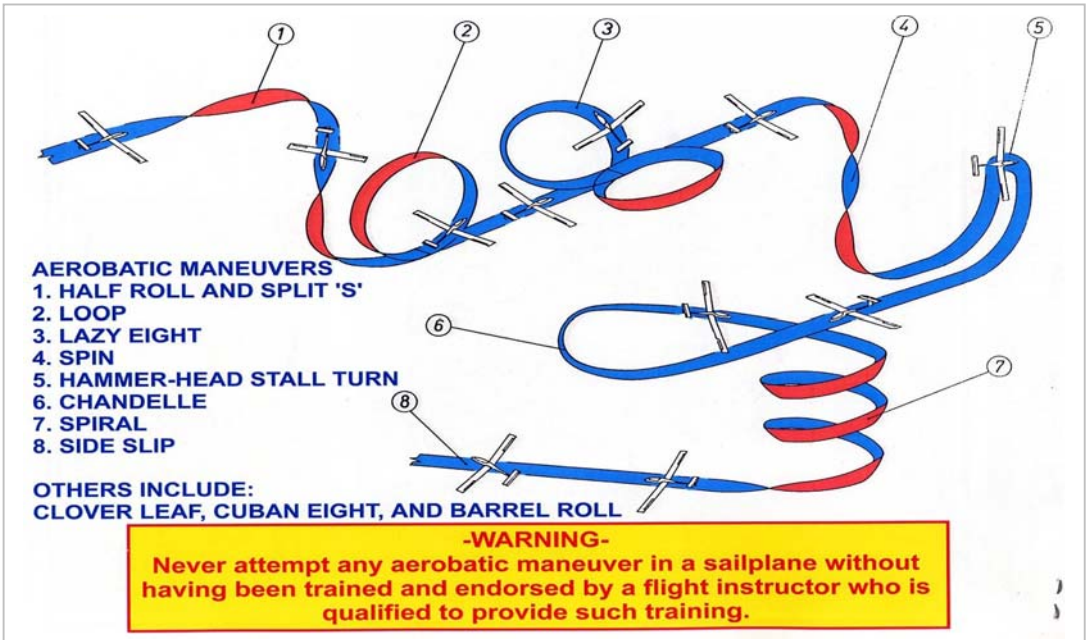


New Life Breathes Through The Windsock

Thanks to Martin, Jakob and Walter, Hawkesbury airfield now boasts a brand new windsock. It may hurt your eyes for a while, until it fades! Good job, well done by those members.

This is the BEFORE picture. Sad, isn't it?

And this is AFTER the renovation. Quel différence!



Can <u>You</u> Do All This In A Krosno?

A Tribute To Gordy Hicks' 50 Years At MSC

By Neill Graham

In the 20 or more years that I have known Gordon, I have always liked and admired him. He is a man who speaks his truth with conviction, yet with respect for others. He is dedicated not only to our club but also to soaring in a way that is extremely rare.

His exploits are legendary - especially that flight to Megantic in the 1-26 in the 1950s!!! And he never ages. Gordy is the same man now that he has always been and this is truly inspiring to the rest of us who ARE aging!! So, in a relative way, he's getting younger every year! The cheerful presence he brings every day to the club is offset by his firm insistence at the instructors' panel meetings on the "proper" way of flying and teaching. At our AGMs his humour is mixed with serious belief in what would benefit the club most of all, not himself.

I always look forward to seeing Gordon on flying days as his presence is "uplifting", reassuring, and his authority is correct, yet unobtrusive. To see him behind the prop of the tugs is also a sight that gives one a feeling of continuity, safety and yet adventure. If only we could clone Gordon for the other clubs in the country, soaring would make a comeback of unprecedented proportions, I'm sure. Thanks for everything, Gordon. See you on the flight line soon... and congratulations for 50 years of showing us how it's done with style!

Our Gordy