



Official Newsletter of the Southern Ontario Glider Group Inc.

TASK



A Model Aeronautics Association of Canada Chartered Club

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Editorial



I started to prepare this newsletter a little earlier than usual because Sue and I will be rather busy in September. The Campbells will be moving to Dundas from West Hamilton (a perilous 5.6 Km. cross-country trek!).

It's amazing all of the things that need to be done when planning a change of address! How could there possibly be so much to pack? It's hard to part with some of those things that would be expensive to replace - though you have no foreseeable use for it. You just try to live by the motto, "If in doubt, throw it out!" Funny - I can't think of any model airplane stuff that falls into that category <GRIN>.

Once in a while something happens that takes time away from our preferred pastimes. When this happens, our modelling projects fall behind schedule. I must be the only member of SOGGI who has yet to build an unpowered glider!

In *President's Choice* Fred suggests we review the events of the past few months and decide whether or not we achieved the goals we set for this year. The Sagitta I started almost two years ago is still not finished. I was going to use this sailplane to learn how to launch and get my Glider Pilot Wings this year. Further, I built it to the plans and this would seem the wrong thing to do based on the advice of more seasoned builders. Oh well - maybe next year!

Elsewhere in this issue, Fred Freeman describes the Otto Bandmann Memorial Day. You may also find the short article from Neil Tinker on centring your sailplane in a thermal of interest.

Rob Campbell



President's Choice



As the days grow shorter and we begin to realize that the flying season - for some of us at least - is almost over, perhaps we should sit back and take a good look at ourselves, Did we build that promised new ship? What new skills did we acquire? Have we been able to improve our flying technique? How can we boost that performance in the coming year?

Like everyone else, I suppose, my own answers to these questions are somewhat negative, for there are always a couple of items which for whatever reason are still not scratched off the list. There seems to be so little time, or the weather refuses to cooperate; or maybe I just don't feel good. Life, they say, is something that happens to us while we are busy making other plans, and we are obliged to admit that nothing is for sure, except maybe night and day.

This last year has seen some exceptional flying days with plenty of thermal activity, so we can't complain about that; the field has been "manageable" after all. It was hoped that our paying for the first cutting might shame the Council into cutting the other half, but no way! We have had a raft of people suggesting what "we" ought to do with regard to cutting the longer grass but none of these people volunteered to put their ideas into practice!!

Next season we hope to have a new home; your Executive Committee has already taken steps toward the realization of this goal, and it is hoped that we shall be able to put before you a suitable proposition at the upcoming Club Meeting.

Keep those batteries charged and enjoy! See you at the meeting.

In the meantime, don't forget to

Drift with the Lift

Fred Freeman

*Otto Bandmann
Memorial Day*

Despite the fact that the weather could not have been better, only 18 members turned out for our annual Club Day event. This is the one contest of the year that is run exclusively for the membership so that even the merest beginner has a chance to win something.

The proceedings got underway at 9:30 with a spectacular demonstration of great acrobatic expertise by the SOGGI Habitat Erection Team, who attempted to rewrite the assembly instructions for Bill Woodward's tent. The assembly went well until, with the test fully erected, they discovered that they had several parts left over! This wouldn't have been too bad were it not for the sudden intervention of the owner, who solemnly informed them that they had put the whole thing in the wrong position! "NUFF SED!"

With these antics completed and the Pilots' Meeting out of the way, the action got more serious as the first round began.

Weather at the start was ideal for the Novice Contest and soon an assortment of Gentle (and Sophisticated) Ladies were jockeying for position in the light lift, the scoresheet reflecting the keenness of the competition. Paul Schmidt led the pack with a first sortie worth 313 points. He was hotly pursued by Kurt Zorn and Al Hilborn. The Experts were likewise locked in mortal combat with Bill Moar and Bud Wallace putting in excellent first round flights to lead the field.

Those of us who were obliged to fly in the last group fell prey to a lull in thermal activity extending from mid-first to mid-third rounds, which showed up on the scoresheet as reduction in flight times for some. Keith Armstrong and Kurt Zorn both managed to hit the right air to turn in quite outstanding second round flights.

Results were as follows:

SAILPLANES

| | NOVICE | PTS | EXPERT | PTS |
|----|--------------|------|-------------|------|
| 1. | K. Zorn | 1148 | B. Wallace | 1321 |
| 2. | K. Armstrong | 790 | B. Woodward | 1273 |
| 3. | A. Fund | 729 | B. Moar | 1191 |
| 4. | P. Schmidt | 708 | P. Ashton | 1123 |
| 5. | A. Hilborn | 576 | K. Fritz | 1005 |
| 6. | | | G. Fritz | 992 |
| 7. | | | F. Freeman | 800 |

ELECTRICS C.D. Bud Wallace

This contest was run concurrently with the Main Event and because so few of us had electric models it turned out to be plagued by small numbers. (Quality, not quantity! Ed.) There were only four entries - maybe there will be more next time.

Results:

1. S. Watson
2. D. Wilkins
3. R. Campbell
4. B. Wallace

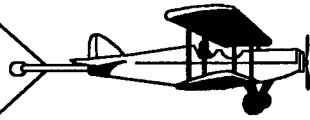
I would like to express my thanks to everyone who was able to attend and I want to extend a BIG VOTE OF THANKS to THE LADIES - JANET ARMSTRONG, MARGARET ASHTON AND GLADYS FREEMAN who not only took on the responsibility for the catering and supervised the distribution, but also made up the sandwiches and baked cookies. Thanks also to Rose for the presentation and to Bill Woodward for the soft drinks.

It seemed like a good time was had by all and no-one went home empty-handed.

LET'S DO IT AGAIN NEXT YEAR!

Fred Freeman

MEETINGS



The balance of the 1993 meetings are scheduled for the following dates:

September 26:

1. You may recall that at the April meeting the president brought forth the suggestion that the club look at bulk purchasing of balsa wood from some source and the possibility of members piggy backing orders to the U.S. to help each other to reduce shipping and handling costs. The consensus was that this should be tried in September. Members please submit your requirements to Fred Freeman on or before the September meeting.
2. Very good 1/8" X 3/8 spruce will be for sale.
3. ELECTRA Raffle.

October 17:

November 14:

December 12: Annual General Meeting

ElectroSpeak

by Rob Campbell

Using the ACE DIGIPACE II

There are two things we want to do with the rechargeable nickel cadmium batteries that power our R/C transmitters and receivers:

1. Charge and use them properly to maximize capacity and life; and
2. Check them periodically to determine if they're OK.

The basic charger that comes with most radios delivers about 50mA which charges a fully discharged pack in about 14 hours. After this point, the current only generates waste heat and can reduce battery life. In addition, keeping the batteries on constant charge leaves you totally in the dark about how good the cells are.

Charging:

Ideally, charging should only replace the charge that is used up during a flying session. For example, say 200mAh of capacity is used up while flying. Then with a charger current of 50mA and allowing an extra 40% for charging inefficiency, the cells should be charged for $1.4 \times 200/50 = 5.6$ hours.

The capacity used up (200mAh in this case), is not easy to determine. Further, NI-CDs tend to lose their charge with time. Most of us probably just do an overnight charge after each flying session. This will overcharge the cells, but since the charging current is low, damage this might cause would be minor, especially if the charger used switches to a reduced charge rate after a period of time.

Checking:

It is very important to check for deterioration of the transmitter and the receiver battery packs - no matter how old they are or how often they are used! This is best done by cycling the battery pack to check capacity.

The best way to cycle a battery pack is to use a battery cyclor made for this purpose. Cyclers are available that discharge the cells with a constant current down to a preset voltage (usually 1.0 to 1.1 volts per cell) and automatically stop (or start charging). This can be done manually, but it is very time consuming. The most popular tools for this purpose are the ACE DIGIPACEs (I and II).

The instructions supplied with the latest model, the DIGIPACE II, are excellent. The instructions cover the operation of the unit in detail, as well as background information on how to determine safe flying time, troubleshooting batteries, changing charge rates for 800mAh cells, and information on battery care.

The bottom line is that if the capacity of a cycled battery changes significantly, this is a sign of trouble. Starting before flying season, the capacity of the battery packs should be checked about once a month. If, over time, the capacity of the pack drops by more than about 20%, the

pack should be grounded. Using the pack after this point puts your aircraft at unreasonable risk. You can either check further for a problem with an individual cell and replace it or retire the pack.

Another check is to measure the capacity of the pack after leaving it alone for a week. If the capacity after a week is less than 3/4 of what it measures immediately after a charge, then the battery pack is not airworthy.

Transmitters usually have some sort of voltage or transmit strength meter that the pilot can check from time to time. Receiver batteries can only be checked on the ground. The environment receiver battery packs operate in can also be somewhat harsher (I.E. heat, shock & vibration).

If all this leaves you shaky about your airborne batteries, consider a battery back-up system. It is cheap insurance.

I have been using the DIGIPACE II for some time now. I would like to pass on some things regarding it's use.

1. Stability

The unit is reliable but is susceptible to spike voltages on the 120VAC line. I experimented with this by plugging in a vacuum cleaner in an adjacent outlet and found the DIGIPACE II would sometimes go into trickle mode. Momentary loss of power causes the same result. This is important because if such an event occurs during the charge cycle, the battery will not receive a full charge. An external power line filter/surge arrestor device may be of help.

2. Connectors

For some reason, the power plugs supplied with my unit were not reliable. The inside diameter of the plug seemed to be too tight on the centre pin on the jack and the outside diameter seemed to be too small to make a reliable connection to the jack's outer contact. If you run into this, suitably sized connectors purchased at Radio Shack work fine. Strange.

3. Discharge Regulators

The discharge current regulators get very warm during the discharge cycle. The only heat sinking is the tinned copper on the circuit board. Small heat sinks can be mounted to reduce the operating temperature of these components. By no means is this mandatory, but reducing temperature normally reduces the likelihood of failure for such electronic devices.

4. Adjustment for Different Cell Counts

Potentiometers make it possible to adjust the CELL SELECT switches on both the TX and RX to discharge any number of cells - almost. The calibration requires an adjustable voltage source and a diode to stop the DIGIPACE from trying to charge the voltage source after tripping back to CHARGE. Don't attempt this if you are not sure what to do!

The charging circuit is a constant current design so up to about 10 cells on either the TX or RX could be charged without modification to this unit. The discharge function draws a constant current then switches to charge when a preset voltage limit is reached. For example, you can set the unit to trip at 7.7V to measure the capacity of a 7 cell motor pack if so desired. Unfortunately, the unit cannot be set to check just one cell at a time - the discharge circuit requires more voltage to operate properly.

Videography Tip:

If you have a camcorder that uses NI-CAD batteries, you can use the DIGIPACE to automatically discharge the packs. Most cameras use 6.0V packs so you can use the 5 CELL setting on the RX side. Make a suitable device to connect to the contacts on the battery (I used a rubber band to hold a little perf board drilled to accept suitably spaced #2 screws) and you're away! Just remember the DIGIPACE is only designed to charge up to 1200mAh cells so depending on the size of battery you are using you may want to charge it on its regular charger.

5. Use of the DIGIPACE on Transmitters with Polarity Protection

If the DIGIPACE is being used properly but it won't go into discharge mode even though the batteries are OK, there is a reverse polarity protection diode connected between the charging jack and the battery inside the transmitter. This diode needs to be shorted. Again, don't attempt this on your own if you are unsure what to do. This may also void the warranty on a new radio!

The DIGIPACE II is a good unit - serious R/C modellers know the benefits of having such a device to protect their investment. If you plan to get a DIGIPACE II or already have one, these observations may be of interest.

Rob Campbell

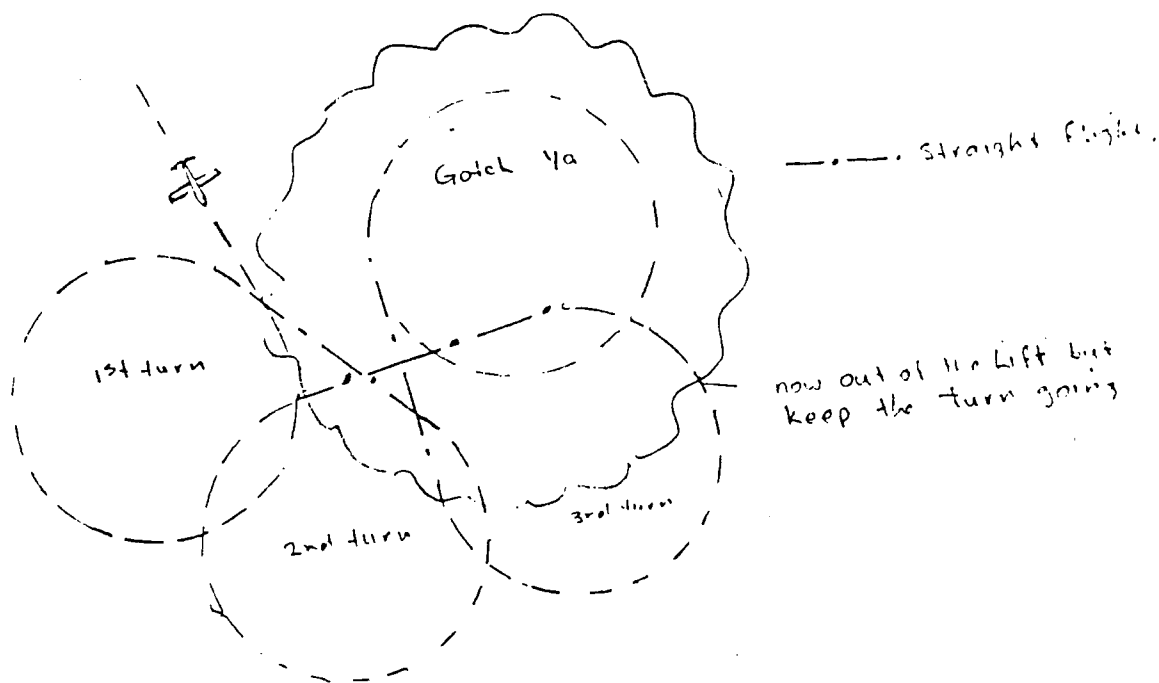
HOW TO THERMAL
(as does the World Champion Glider pilot) NEIL TINKER

As most of you know I spent 6 weeks in Australia and one of those weeks (5 days) was sent at the Sportavia Gliding School at Tocumwal.

It just so happens that the reigning World Champ. Ingo Renner is a part owner in this school and my brother Len and I ended up with Ingo as our instructor.

We put in 5 flights per day ranging from 8 minutes to over an hour. It was pretty difficult at first to really understand what all the manoeuvres that we were asked to perform. After release we set the Blanik up for an air speed of 45 knots and then a voice from the back seat would say turn right and after about 90 degrees I could then feel the thermal, (Ingo of course felt it long before) then after about 300 degrees the voice would say 'straight ahead, no sooner would I get the wings level he would say 'right turn'.

This pattern would continue until we were in lift for the full 360 turn. The penny 'did not drop' as to why he flew this pattern until at the Wednesday morning briefing he drew this picture on the black-board.



And this is what he explained.

A LAZY pilot when meeting up with a thermal allows the thermal to push him away, so to locate the thermal, once the wing of the glider is pushed up by the rising air instead of trying to level the glider out keep the turn going until you get the wing pushed up again then FLY STRAIGHT for a second or two then turn, and keep up this manoeuvre until you are in lift for the full 360 deg. of your turn.

So when you see your sailplane start to turn of its own accord KEEP THE TURN GOING and when it happens again be ready for it and then fly straight for about 3 seconds then turn IN THE SAME DIRECTION, keep up this pattern until you have centred the thermal.

Now you know one of the the 'secrets' of a World Champion.