



TASK



Volume 27 Issue 1

February 2011

Web pages: www.soggi.ca

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And so it was decreed, that all sailplane pilots should return to their place of domicile and then pay their club memberships...

In the bleak midwinter, frosty wind made moan, Earth stood hard as iron, water like a stone;
Snow had fallen, snow on snow, snow on snow,
In the bleak midwinter...about twenty minutes ago.

Where O where is that harbinger of Spring? - That dulcet ring of the telephone that precedes the warming tones of the lawn care master plan expert and sailsperson persistent. For only the price of three Gentle Ladies and a heavy duty hi-start you can have your weed free of grass (or is it grass free of weed?) for the whole summer – mind you it will be growing so fast you will have little time or energy left for flying.

Many years ago, my old uncle Albert, hypothesized that the space time continuum was not necessarily linear and that time might not always maintain its modularity in localized high intensity warp zones (known in the R/C Sailplane community as “Landing Tapes”). Df Albert, as he was known to most of the family, evinced the theory that the weave structure of the fibres of the landing tape were a close match to the critical wavelength of the Neutron weft and that this, though by itself not significant, since any space-time geometry is a solution of the field equations for some configuration of the stress-energy tensor field. In a nutshell, it means that when you are landing your sailplane – especially in a contest – you may be able to control time or space but not necessarily both at once or with the same degree of certainty. Some people have tried landing tapes that are not woven. This seemed to solve the problem – until someone noted that the tapes were stretching (or being stretched) and that there was, in fact, no significant improvement in the rationalized landing scores. Uncle Albert spent his later years trying to perfect 2.4GHz tensor field modifiers but was not able to reduce the size of the field unit – the array of 24 cylindrical antennae too closely resembled a case of Blue and the liquid stress-energy propellant required constant sampling (for quality control purposes only). The only smart part of the whole design was that you could return the empty antenna casings to the Beer Store and get 5 cents each for them.

Just a reminder: All flying has ceased at Fletcher Field and the move to the new field will be announced when we get the green light from Hamilton Sod. In the meantime, any hardy soul can test their slope planes at Westover – crampons and snowshoes may be needed, as well as warm clothing, hot chocolate and an emergency beacon. Plus, leave enough room for your plane and radio gear.

This year we are listing six LSF contests to be run on a weekday. Hopefully we can get a good turnout for these events – a number of flyers are now working on Level 3 and that requires at least 10 participants in a contest to be eligible for earning points. So let's work hard at getting the pilots out there and flying – also there is a requirement for two witnesses for the duration, slope and distance tasks.

Don't forget to cycle and maintain your battery packs – keep them in good shape for the season ahead. And remember – If in doubt, throw it out and get new ones.

Minutes of SOGGI Meeting, January 2011 held at the Rockton Library

Ray opened the meeting. Enough members were present for a quorum

Report on annual meeting:

Annual meeting was held on the same day as the Christmas party

Executive was re-elected for another year before the Christmas lunch. All who attended had a wonderful time.

Ray reported he and Werner had visited Peter at Hamilton Sod and presented him with a Christmas basket. The meeting went well Peter being very pleased that we had not damaged any of the sod. They felt that both fields would probably be available again when the new sod was present, possibly in 2012.

Ray next reported that Ben Schouten's field will no longer be available. It was suggested that that the Schoutens should be visited after phoning them to arrange a convenient meeting time. During the visit they should be thanked, any of our stuff still stored there should be picked up and any of our signs removed.

Ray said he and Werner were going to look at some new potential fields east of Binbrook road

Ray next welcomed some visitors and potentially new members. Nick and his daughter, Frank Pilih, Hanspeter Keller, Terry Sears (Others names I didn't get because of the general noise)

Next item

A question was asked about flying in the winter at Fletcher road field. The consensus eventually was that as long as the field was frozen solid so the sod would not be damaged and if we did not try to drive into the field to where we usually parked it was probably OK.

Peter next gave his financial report

\$3590.10 in the bank and a few small bills were still owing

21 Members had paid their membership dues

Ray suggested that he send an e-mail to those members who had not paid as a reminder

The Westover contract had arrived with an offer to us to rent the field for five years. After some discussion it was decided that we should continue to rent it at one year at a time. Yearly rent was \$180.10

Discussion of next years' events

Ray noted that most of our events were quite successful and that many were booked for next year. He said that many events did not yet have a CD and called for volunteers. (Due to the ensuing loud background noise and confusion the secretary was unable to get the names of the volunteers.)

Dick said he would post a list of the events for next year in the TASK

Bob suggested that the members who had volunteered to act as CD should be given guidance about what they must do. This idea was approved.

Ray next noted that Werner had kindly offered to donate some of his old trophies to be awarded to winners of the contests next year. The club then thanked warmly thanked Werner for his generosity.

Ray next noted that the contests should be sanctioned as soon as possible so the dates would be put in the MAAC magazine as soon as possible.

Next item

Slope soaring models

It was noted that it was probably too late to choose and then build a slope soarer as a club project. Ray suggested that interested member assume responsibility for getting their own plane and that they inform Ed of their intention to fly.

Ray also volunteered to cut foam cores for any member if they would supply the necessary templates and foam.

Some interest was displayed in using a slope soarer being developed by one of the members

Ann showed a Zaggi kit she intended to use and several members thought it would be an excellent choice

Les next brought up the dates of events that the club had had a booth at last year and asked authority to rent booths again this year. Two events were accepted. The one at the aviation museum and the other at the Swap Shop in Kitchener. The table at the museum cost \$60.00 and it was suggested that this fee be presented as part of our annual donation to the museum if possible. The 2 tables at Kitchener cost \$20.00

New members were then discussed

It was pointed out to the potential new members that the club was primarily a glider club and that Electric sport planes etc though welcome would always have to give way to gliders in circumstances when a conflict occurred.

Ray pointed out that the club often been able accommodate both at the same time at the Fletcher field because it was so large but that this situation might change next year at the new field .He also said that because of our success at accommodating both gliders and electric sport planes that we were going try accommodating members who wished to fly free flight planes on Friday mornings

He noted that new members wishing to fly primarily electric sport planes were welcome but that they should be aware of the limitations and be willing to happily accept them to avoid being disappointed.

Membership fees and the training of junior members next came up. After a great deal of discussion decisions were deferred until the executive had a chance to consult MAAC about the insurance situation.

Coffee break

Dick then brought up the subject of flight instructors and their role

The club at present has three accredited instructors Dick Colley, Bob Hammett (for Mode 1) and Otakar Koprnický. After a lot of discussion about how new instructors should be accredited in light of the insurance situation it was decided that no decisions would be made until MAAC was consulted.

Meeting adjourned

A Few Words from a Soaring Newbie by Les Peer

After retiring in 2005 and spending time in a powered model plane flying course I decided to accept the commute to the Mt Hope area to fulfill a long time ambition of model glider flying. There I could gain the benefit of a quiet day in the country, physical exercise while doing something I enjoyed and a challenging technical hobby with great camaraderie.

A chat with Stan Shaw at a swap meet early in 2008 led me to joining SOGGI. I attended the March meeting then contacted the chief flying instructor Dick Colley. We arranged a mutually acceptable training schedule thus starting me in the excellent SOGGI glider wings training programme.

My earlier 1985 choice to build a 2 Metre Gentle Lady from a Carl Goldberg kit was fortuitous. The kit is readily available, I believe now through Great Planes, has good instructions, fits together well, flies' great and is easily maintained. Some features which make it so great a trainer are: plenty of polyhedral to make it self correcting, a basic Clarke Y airfoil for a slow reasonable glide ratio, a one piece elevator located aft of the rudder for easy construction/repair and a wing affixed to the fuselage top by centre elastics which allow for wing skewing on hard landings thus minimizing wing damage. Building your own plane, even from a kit, teaches fundamental construction techniques applicable in maintaining your planes.

Following Dick's excellent tutelage through the club's wings programme I attained my glider wings by summer's end and I had a ball doing it! Our other instructors, Bob and Otakar along with many other club members have offered me the benefit of their wealth of soaring knowledge whenever I am at the field, participating in club contests or building a model. The enthusiasm of our members is a great motivator, not something to be under acknowledged, when taking on a new endeavour. I always remember the wonderful transition from a glide to actually soaring as I caught my first significant lift and went up, up, up, instead of down!

As my next logical step on the learning curve I am completing a 100 inch wing span OLYMPIC 2 from a Skybench kit to be flown with rudder, elevator and now spoilers (RES).

I find that participating as a flyer and contest director in club activities is a great day out, teaches me a great deal and is helping keep me fit. I suggest a similar progression for anyone new to gliding. Many thanks to all the club members who are so helpful and such good company. Have a great summer soaring.

On Launching - From R/C Soaring Digest, April 1991 – Unearthed by Les Peer from the Club Library Archives

(The following is a reply to a request asking if there was anything available on high-starts)

What a good idea! I hadn't thought of this as a subject by itself, but I have come to the conclusion that I could probably do at least an hour's worth of video on "Launching Equipment and Techniques". After all, I've been flying about 20 years or so now, and have probably seen and/or been a victim of just about every kind of launching device used!

I remember when I first started flying "gliders". My first was a Malibu...about an eighty-inch span, I think. We were launching on a high-start, hacked from some quarter-inch surgical tubing, some 30 pound test monofilament, a tent stake, and

chute. (The first clever idea was the chute, for obvious reasons.) Airtronics hadn't yet released its 'launch Pail'. We had, of course, skipped hand-towing altogether!

In any event, the problems I had, at first, had to do with CG and tow hook location. Trying to solve two problems at once which had interactive elements was very frustrating, as I recall. (Launch, Crash, Rebuild: Launch, Crash, Rebuild...) Looking back on it, I think that since I broke the nose off and then glued it back on so many times I probably added enough weight to the nose to correctly balance the model! Then, somehow figured out to move the tow hook forward a bit to eliminate an additional tendency to stall (and splatter). Sailplanes which are not stable on launch are not fun! CG location and tow hook placement (disregarding radio failure) are about the only things that could make a model do something stupid (like stalling) during launch. Most kit manufacturers show conservative tow hook placement on the kit's plans. It's almost always best to use the position indicated for the first flights.

First, before you go out to the field, balance your ship in both roll and pitch. Use the CG indicators on the plans to achieve pitch axis balance. Also, make sure to balance the model in roll axis. If one wing is heavier than the other, use one or more nails driven into the tip to achieve the proper balance. Use the indicated tow hook placement. Also, make sure that you have fully charged your batteries!

At the field, stake out the high-start so that you will be launching directly into the wind, if any. It is best to have a 5 -10 MPH wind when using a high-start as both stability and resulting launch heights are superior to times at which there is no wind at all. Also, if there are gentle winds, there is very probably thermal activity present! Good! Assemble the model making sure to check battery and servo connections, control surfaces, etc. Making sure you have a frequency pin, then range check your radio by collapsing the antenna and walking about twenty paces or so away from the model¹. If you can observe control surface deflection while moving the sticks, everything's OK. Otherwise, find out which battery you forgot to charge. Next, hand-toss the ship to make sure it has a flat glide. If possible, find some very high grass or weeds to act as a cushion, just in case. To launch, jog upwind a few strides with the ship held javelin-style. If it feels like it's going straight ...not trying to climb or dive ...while continuing to jog, briskly push it out front away from the body, at about eye level, keeping the fuselage parallel to the ground until release. Re-read this paragraph until you can picture it in your mind. You can easily do a hand-toss all by yourself, or you can trust someone to chuck it for you if you wish. (Just don't overdo it by throwing too hard.) Doing it by yourself is kind of a right of passage as when you've thrown the model into the air and then landed it, you've actually flown it yourself for the first time. It doesn't matter if you're a rank beginner, or seasoned veteran; throwing any new model for the first time gives you the same rush!

The next step after making the necessary adjustments indicated during the hand-toss phase is the maiden flight. Just make sure that you have hand-tossed the ship several times and that a relatively flat glide requiring little, if any correction, is attainable. So, now we're ready!

Retrieve the chute and pull back (downwind, of course) on the line until it has at least six pounds of pull. Heavier models those weighing more than four pounds - should probably use eight to ten pounds of pull. (It's almost impossible to use too much pull on a high-start line.) Using a standard high-start rubber length of fifty feet², this amount of pull should occur at one hundred paces or so from the point at where the line was lying in a relaxed state. Let someone else hold the line or hook it to a stake in the launch area while you turn on your transmitter and receiver. Then, hook up the ring to the tow hook and face down line (upwind). Hold the model in a slight nose up attitude if there is no wind. If there is any wind, just hold the model so that the wind doesn't push up on the nose prior to release.

Now, comes the moment of truth. Release by pushing the model away, out and up...remembering to let go! Decide that you are going to let go prior to hooking up!

I'M GONNA DO IT! WOW, that's really climbing out FAST!!!

(OK. Now remember ...DON'T PANIC! ...What you want to do now is just keep the nose going upwind, straight down the line. That's all. Just keep it going straight upwind.)

OH, OH...it's starting to curve to the right ...(PUSH the elevator stick slightly FORWARD and it'll straighten out.)

OK ...that's better. WHEW! It's starting to slow down and it's pretty high. What's next? (Just let the ship fly off the tow. If you have a bit too much up, you may have to push forward on the stick, then pull back a little to get the model to fly off. Once free of the tow, steer into the wind ...etc.

Yeah, that all sounds simple. Right? But that's really all there is to it. If you can steer in a straight line, you should be able to easily launch on a high start. Below are a few common problems and what to do.

STALLING: The model stalls when its flying speed is too slow. Most commonly caused by too steep an attitude (the nose up too high). When this occurs, the model simply falls because its wings can no longer generate lift. The model will shudder, and then sharply veer to one side or the other on the launch. (Stalls while flying normally (e.g., not during launch) will usually be straight

¹ For Range check, Les recommends 30 paces with the antenna down – for 72 MHz radios, per Manufacturer's recommendations for 2.4GHz radios

² Les uses 100' tubing and 500' of line, with a stretch of 60 paces for 2M planes and 80 paces for the Standard 100" gliders.

ahead, unless you're in a tight turn. Anyway, to regain stability in a stall, push forward on the elevator stick to increase airspeed. Reducing the angle of attack (lowering the nose) causes the model to gain speed and regain lift.

SPEED: Due to lack of line tension. If you haven't pulled back far enough, lower nose and fly straight ahead -don't turn! Just try to land straight ahead.

LINE BREAK: (Not likely unless there's a high wind.) Nose straight up-don't do anything until airspeed is regained. Try to achieve forward velocity before effecting control. HUH? OK. If the line snaps, the ship will normally climb straight up. Don't do anything, yet, as it won't do any good unless the ship is moving in its forward vector and air is flowing over the control surfaces. Wait until the ship stops upward movement, stalls, and starts to fall. Then, when the nose rotates downward towards the ground, the airspeed will increase and only NOW should you pull back on the stick to attain level flight (a save, in soaring pilot parlance).

LOSS of CONTROL - BEFORE launch: Turn everything on and tune everything out! Concentrate. SENSE... Since you've now achieved a successful launch and understand how to correct any veering off, you can experiment with elevator settings to achieve maximum launch height. Just remember to take it easy, one step at a time and, if possible, get experienced help!

D.O. Darnell, 4227 E. 83RD St., Tulsa, OK 74137
"Launching Equipment & Techniques" video will be available March 15, 1991.

A Pulse Operated Ni-Cd Zapper.

This article first appeared in "P5" - March 1999

(the original article referred to showed a power supply connected across the cell via a push switch)

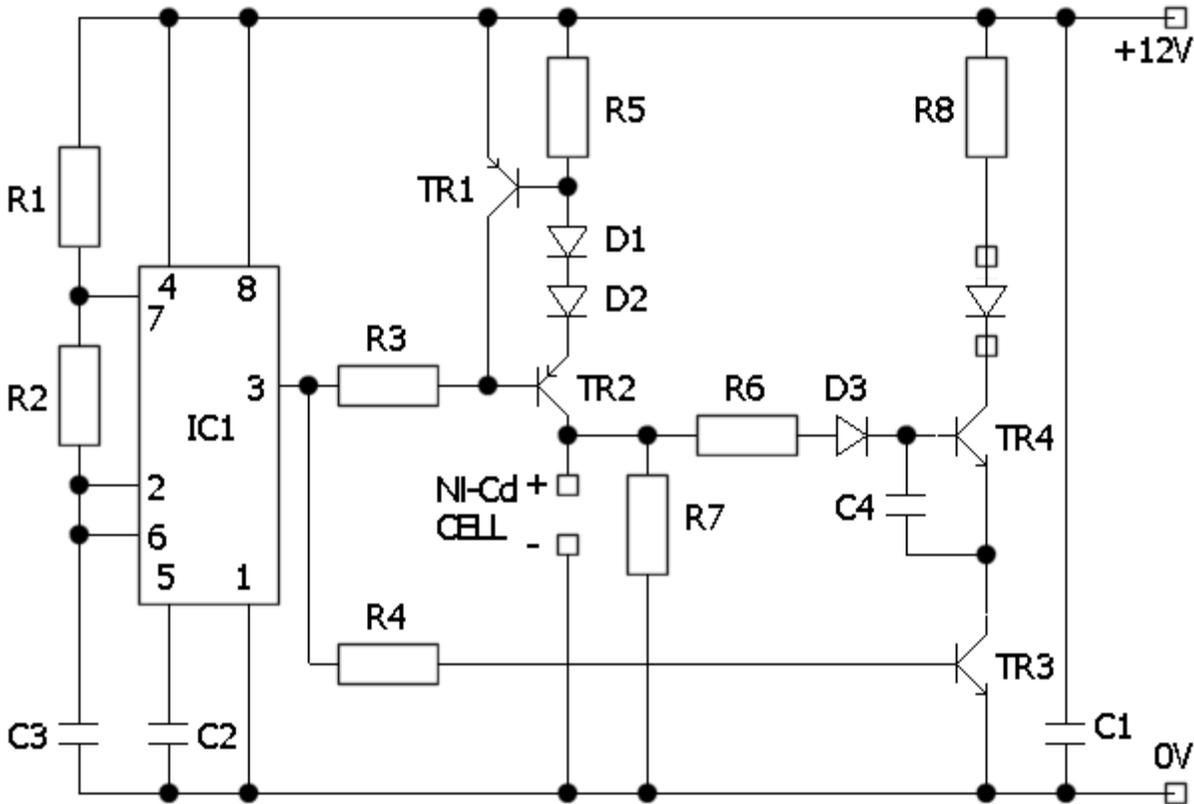
A recent P5 carried an article about bringing apparently dead Ni-Cd batteries back to life. This design uses a similar technique but instead of leaving the timing to chance, it gives a visual indication of the state the battery is in. I have concerns over the safety of the original circuit design, as it is quite possible for the switch contacts to weld, making it impossible to remove the charging current if the battery starts to overheat. Even removing the battery, assuming that is possible while it is hot, leaves the dangers that the rectifier could have gone short-circuit causing the reservoir capacitor to explode. To overcome all these hazards, this design uses short, controlled current pulses, which should be safe, even if left on for long periods with a shorted battery attached. An LED illuminates as soon as the battery has accepted charge to let you know its time to put the battery in a normal charger. This device repairs batteries, although it will also charge batteries, I strongly advise that a proper constant-current charger is used instead.

So what causes the battery to die in the first place?

Like most cylindrical cells, Ni-Cd batteries are constructed from a metal container, filled with active chemical compounds and a centre electrode suspended from a plastic 'bung' at the positive end. In a healthy cell, the internal chemical reactions between the centre electrode and the casing produce about 1.25V across them. This is the voltage available to the outside world. As Ni-Cd cells deteriorate, the chemical filling starts to separate out and conductive paths between the centre electrode and case start to form. These are analogous to the formation of stalactites and stalagmites between the ceiling and floor of a cave. As these tracks grow they provide a leakage path which reduces the cells ability to hold charge. When the tracks completely bridge the electrolyte, the cell ceases to work at all and will usually measure as short-circuit between its terminals. In order to revive the battery, the short must be persuaded to break, rather like a fuse going open-circuit and preferably with its gap as long as possible.

The easiest way to 'blow' the short is to force enough current through it that it heats rapidly and disperses the conductive path as widely as possible. Unfortunately, to produce enough current it is necessary to apply quite a high voltage, usually several times the cells natural terminal voltage. As the short clears it leaves the cell being overcharged by maybe 100 times its safe limit and this will cause further problems if left for too long. Having witnessed a small "AAA" cell launch itself 2 metres and embed itself in a wall, I cannot stress just how dangerous they can be!

To overcome the charging problem, the design described here uses very short high current pulses and enables a voltage monitor between them. Because the pulses are limited to 2 Amps and are only 1 millisecond long in every 10mS, the average power dumped into the cell is only about 0.25W, which is well within safe limits. During the 9mS between pulses, a monitoring circuit is turned on which will illuminate an LED as the cells voltage reaches about 1.1V. Trials with a selection of dead cells showed they all recovered within 5 seconds. Leaving the unit running for a long period only caused a slight warming of the battery.

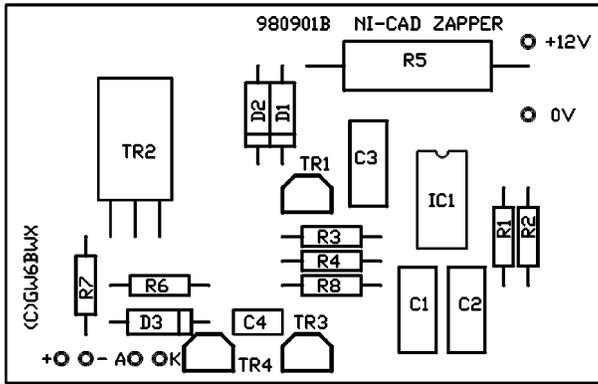


Circuit Description.

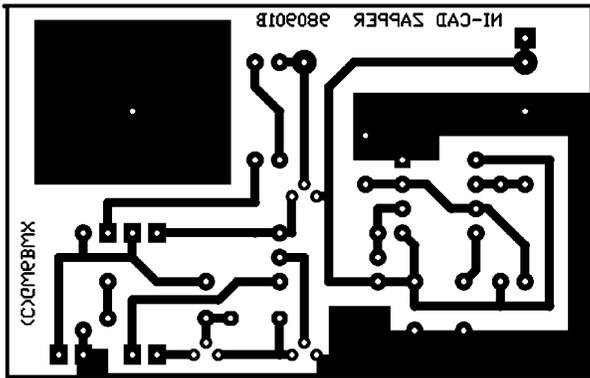
R1, R2 and C3 form the timing components for the NE555 timer IC. With these values the IC oscillates with a 10mS period (100Hz), the output pin going low for 1mS and high for the remaining 9mS. While high, it lifts the base pin of TR2 close to the positive supply rail, the two diodes in TR2's emitter ensure the base goes more positive than the emitter, therefore turning the transistor off. At the same time, TR3 is provided with base current and turns on, bringing its collector voltage close to 0V. If any voltage is present on the battery at this time it provides bias via R6 and D3 to turn TR4 on and light the LED. When the output of the NE555 is low, TR3 turns off preventing TR4 and therefore the LED conducting. TR2 turns on and allows current from the positive supply rail to reach the battery, this is the current that 'blows' the short out of the cell. The current is limited to about 2 Amps by R5 and TR1. As current flows through R5 it causes a voltage drop that at about 0.6V makes TR1 conduct. As TR1 conducts, it provides an alternative path for TR2's bias current, limiting the current it can pass. An equilibrium point is reached with TR1 just starting to conduct, with R5 at 0.39R this is at about 2A. C4 is just a filter, because the delays inherent in fast switching circuits like this, very short pulses may occur during the on-off-on current transitions. These pulses are very short, typically only a few microseconds long. C4 ensures the LED doesn't glow dimly as these spikes occur.

R1	120K	C1	47uF
R2	15K	C2,C3	100nF (0.1uF)
R3	270	C4	10nF (0.01uF)
R4	2.2K	D1,D2	1N4001
R5	0.39 1W	D3	1N4148
R6	10K	TR1	BC212
R7, R8	1K	TR2	BD132
IC1	NE555	TR3,TR4	BC182

The LED can be mounted off-board and can be any colour.



ZAPNICAD Top Overlay



ZAPNICAD Bottom Layer

Construction:

A PCB design is provided but the layout is not critical. R5 should be rated at 1W and TR2 should have a small heat sink. The types of other components are not too important but keep to the stated values for the timing components or the 1:9 pulse ratio will not be accurate. D1 and D2 are rated at 1A current but actually carry pulses of about twice that amount. This shouldn't cause any problems as the short duty-cycle will prevent them overheating. Note that the circuit will draw short 2A bursts from the power supply, if measured it may appear to be much lower but the PSU must be capable of providing at least 2A at 12V.

Testing:

After checking for construction problems, apply 12 V from the PSU. The LED should NOT illuminate, except maybe extremely dimly due to leakage currents. Connect a capacitor of about 100nF across the battery connections, the LED should light but be fairly dim. Change it for a capacitor of about 10uF, this time the LED should be fairly bright. The capacitor is holding charge between the current pulses, simulating the action of the battery. If all looks OK, it should be safe to try the unit on real Ni-Cd batteries. Only use this design to rejuvenate single cells, never on packs containing more than one cell in series. Some batteries will be dead beyond recovery so I make no guarantees this design will work every time, but at a cost to build equaling about three new cells it could save you lots of money.

[Click HERE for downloadable PCB files](#)

http://www.atv-projects.com/NiCad_Zapper.html

Brian Kelley

For Sale:

For Sale:

1 – Band saw, “Shopcraft” 14” Deep Throat, 3 – wheel
system _____ \$50.00
Plus 2 spare blades and instruction book.

Contact: Doug Wilkins 905-679-4973

An R/C sailplane pilot who smelled like a distillery flopped on a subway seat next to a priest. The pilot's tie was stained; his face was plastered with red lipstick, and a half empty bottle of Glenfiddich was sticking out of his torn coat pocket. He opened his newspaper and began reading. After a few minutes, the pilot turned to the priest and asked,

"Shay, Father, what causes arthritis?"

"Mister, it's caused by loose living, being with cheap, wicked women, too much alcohol and contempt for your fellow man."

"Well, I'll be damned," the pilot muttered, returning to his paper.

The priest, thinking about what he had said, addressed the man and apologized. "I'm very sorry. I didn't mean to admonish you so strongly. How long have you had arthritis?"

"I don't have it, Father. I was just reading here that the Pope does."

Try these links:

<http://vimeo.com/18860450>

<http://vimeo.com/19004126>

2010 SOGGI Executive

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Deadline for February Issue of Task: January 22nd 2011

2010/2011 Calendar of Events

2011

- February 13th MEMBERSHIP MEETING, Rockton Library Hall, 2:00pm
- March 13th MEMBERSHIP MEETING, Rockton Library Hall, 2:00pm
- April 10th MEMBERSHIP MEETING, Rockton Library Hall, 2:00pm

Date	Event	Location	CD Name
Thursday, May 19, 2011	LSF#1		Bob Hammett
Saturday, June 18, 2011 Sunday, June 19, 2011	Bud Wallace Memorial		Ed Smith
Thursday, June 23, 2011	LSF#2		Ed Smith
Thursday, July 07, 2011 Saturday, July 16, 2011	LSF#3		Ray Munro
Sunday, July 17, 2011	Otto Bandman Memorial		Jim Laslett
Sunday, July 31, 2011	2 – Meter		Les Peer
Thursday, August 11, 2011 Saturday, September 03, 2011	LSF#4		Dick Colley
Sunday, September 04, 2011	Big Bird Bash		Dick Colley
Thursday, September 29, 2011	LSF#5		Andy Meysner
Thursday, October 13, 2011	LSF#6		Dick Colley