SDRCC News Letter Number 2 / 2008

Are we lucky or what?

Hope everyone had a great Christmas and New Year!

Well here we are at issue number 2 I hope you enjoyed our first issue and remember to contribute after all it's your club!

Anyway on to the Lipo charging guide which once again has come from the BRCA web page, for those of you that are thinking of running these cells please read and remember to treat them with care.

Safety with Li-Po Batteries

A guide to safe use of Li-Po batteries, from the British Radio Car Association.

Any rechargeable battery that is currently on the market has a risk of explosion, fire, and smoke emission if not handled properly. Despite the stories that have made the press, Lithium (Li-Po) batteries are not fundamentally unsafe, but they need to be treated with a lot more care and respect than NiCd or NiMh. Just because a supplier of a Li-Po battery does not label or warn of the dangers of their product does not make that product safe.

The principal risk is fire, which can result from improper charging, crash damage, or shorting the batteries, and this can be difficult to extinguish. Fire occurs due to contact between lithium and oxygen in the air. It does not need any other source of ignition or fuel to start, and burns almost explosively. A lithium battery fire is very hot (several thousand degrees) and is very good at starting additional fires that can result in loss of models, cars and other property. Homes, garages and workshops have also burned.

These warnings can be a little scary, and they should be as these Li-Poly packs can be very dangerous if not handled correctly, but please try and keep this information in perspective. Kitchen knives and chip pans can also be very dangerous if not handled properly and there will probably be more injuries caused by scalpels or super glue in eyes than batteries. The following precautions should help you enjoy using Li-Po batteries without having a major incident.

General Precautions

- Only charge Li-Po batteries on a charger specifically design for Li-Po batteries. Li-Po chargers are available at varying prices, depending upon the features, for the same price or, or lower than, NiMh chargers.
- Always ensure you use the correct charging voltage for the cell count. This will be 7.4v (2S) for car packs.
- The maximum charge rate should be 1C, e.g. 3.2A for a 3200 mAh pack. For best charging, low charge rates should be used where possible.
- Double check the charge voltage (or cell count), mAh, and current before each charge.
- Never leave charging Li-Po cells unattended (at any charge rate).
- It is best to charge Li-Po cells in an open space on a non-flammable, non-conducting surface (such as a bare cement floor, brick or quarry tile) and away from flammable materials.
- Check your charger for safety. After charging, check battery with a digital voltmeter, the voltage for a fully charged pack should be between 8.32V to 8.45V.
- Do not charge the battery inside your model, inside your car, on home furniture or wood floor/carpet, or anywhere near flammable material.
- The minimum safe discharge voltage is 5.0V (2.5V per cell) when under load, or 6.0V (3.0V) per cell when not on load.
- A number of the electronic speed controllers have a Li-Po feature built into their software; make sure that this has been enabled. Otherwise consider fitting a Li-Po cut-off device. Failing that, stop driving when your motor loses power, remove the battery from the car, and recharge it.
- If using a Li-Po receiver pack then you will need to use a 6V regulator with it that will supply enough current for to power your radio equipment.
- Use connectors that can not be short circuited, or use silicon fuel tube to protect exposed connections. Under no circumstances should the ESC wires be soldered directly to your battery.
- Do not short the battery as it may catch on fire. If you accidentally short a battery, place it in open space and observe the battery for 10 minutes. It may swell up and possibly even catch on fire.
- Have a dry powder fire extinguisher or a bucket of dry sand within reach in case of a fire.
- Cell balancing is a way of ensuring your Li-Po will deliver the maximum performance and capacity over a prolonged period of time, although some manufacturers claim that it is not required with their batteries.
- Li-Po packs are designed for operating temperatures up to 40°C and under no circumstances must they become hotter than 60°C.
- You may need to add weight to your car to balance it and/or reach the minimum legal weight.
- If a pack is involved in a crash or is otherwise damaged, remove the pack from the model and inspect for damage to the pack and the wiring/connections.
- Lithium polymer batteries do not have a hard steel case like a NiMh battery. Instead, a special aluminium foil encloses them. Therefore, they do not vent. If the integrity of the battery is compromised, swelling will

occur. If the battery is damaged and the case begins to expand, discontinue use immediately.

Touring Car Setup Guide second in series:

Hopefully you all understood the basic start last month and have made or purchased a set-up board. If you do not have a method of measuring your shock length ask me at a meeting and I can give you a shot. Once you have checked your shock length it is not something you have to do again unless you move the threaded collar.

Tweak

You will often hear drivers talk saying “my car is tweaked” around the pits. A tweaked car is typically a car which turns differently left to right. Sometimes you will not notice this but the give always is when you start changing things and you do not notice any improvement. Tweak is usually caused by having a big crash and long roll when an impact on the chassis puts a set bend in to that item. On a tub chassis this is bad news but on a flat chassis with upper deck it is very easy to fix. There are other ways you can have a tweak and I’ve listed them below.

a) Un-equal shock lengths
b) Un-even droop screw setting
c) Un-even shock spacer or threaded collar setting
d) A twisted chassis.

First off I would remove the wheels and place the car on the set-up board. If you then look at the relationship between the board and chassis you should be able to see if the chassis is bent or if you can rock the chassis on the board. If you have a tub chassis this is bad news and you will need a new one however you can remove the tweak by loosening all the top plate screws and then giving the chassis a quick flex gripping each end of the car and twisting back and forward. Now check the chassis again on the board to make sure it is flat and re-tighten the top plate screws, job done. When racing if you have a big crash it only takes seconds to loosen these screws and retighten and I would always recommend you do this since you may loose a round or two of racing before you realise your car is tweaked.

Next thing you should check is the droop screw settings. I would recommend you back these out so they do not limit your wish bone drop, then use a feeler gauge to screw them back in so they just grip the gauge on each wish bone. After doing this they should all be at the same height setting and any further adjustment should be done counting exact turns of the screw.

Next thing is to check your shock length to make sure they are the same length left to right, they can be different front to back although it may be easier to just keep them the same length. The away to adjust these is to grip the shaft (taking care not to damage it otherwise the shock seal will not seal and oil will leak!) and thread the ball joint either further on or off until they all measure the same size. Remember if this moves during the season for any reason i.e. replacement you will need to do this again.

Lastly you need to make sure your shocks are built the same using the same spacers etc. If you find a difference then you will need to check the length above again.

Once you are confident your care if free from any tweak the next thing you should do it to adjust your shock collars until you have your desired ride height. Make sure you measure where each shock collar is and keep them the same side to side. At this stage you could go one step further and measure corner weight using a set of scales one corner at a time so that you have the same weight reading left to right. The weight at the rear is usually slightly more than the front but this changes from car to car but as long as left and right are within say 15g then that is good enough.

On a high grip track you may not notice to much difference unless your car was miles out but where you really will notice a change is when its wet or slippery.

Next month we'll talk about springs, happy racing!

2008 Membership form is ready for download via the web so to help our membership secretary please fill it in and return it ASAP. Remember to include BRCA membership if required otherwise make sure you bring your licence with you for the first race meeting in March!

2008 Calendar is also available for download via the web page so get your self's a copy or see me at the next indoor meeting and I'll give you a copy.

Hope you are all looking forward to the new season as much as me!

I found these old pictures of the track when it was getting built in the late 70's.

As you can see this was the original track layout which was resurfaced a few years later and changed so you could bypass the 19T loop (what we now use for modified racing at the GP. So the tarmac in the loop is original and that also explains why it is a bit bumpy.

This was the rostrum which was built first, as you can see it is a bit lower than the one we have just now. This picture was taken during a BRCA national 1/8 scale meeting in the early 80's (I don't know who the wookie is at the fare end!)

Lesro Models hope you all had a great Christmas and new year from Daryl, Ross (pictured below)

Remember for all your model need call Lesro 01202 499354 and remember to say you're a member of SDRCC to receive your 10% discount