



# P&DARCS

Pakenham and District Aircraft Radio Control Society



## P&DARCS NEWSLETTER APRIL 2019



Brian Evans Hot Glue Special, on final approach, being buffeted by wind, September last year, more photos on page 15

**Next Club Meeting, Saturday 30th March 2019  
At Burley Field, 1pm start**

## BURLEY FIELD

Wenn Road Cardinia

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### Editorial Submissions to:

[editor@pdarcs.com.au](mailto:editor@pdarcs.com.au)

## EDITOR'S BIT

### LiPOs

As promised in the March Newsletter, I have produced an article on LiPOs, from page 8 to page 14  
Have a read of it you may learn something you didn't know

The main thrust of the article is fire safety, and getting the most out of your LiPOs

What you need to avoid is the situation shown below, happening in your workshop with no fireproofing around your LiPOs



These LiPOs were incinerated, the workshop survived because the fire did not spread, due to the fireproof surface under the LiPOs (concrete pavers), I now include small cash boxes to enclose the LiPOs, (from Bunnings)

**Frank McPherson** Editor

## WHAT'S ON At P&DARCS 2018

Look in the Club Calendar on page 11

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# NOTICES

## ALARM FOR LOW FLYING AIRCRAFT

For some time, the Club has had the situation where low flying full size aircraft have been practicing engine – out procedures over our flying field

The problem we have is, we cannot hear the approaching aircraft, as the engine is at idle  
According to CASA regulations, if the full size pilot is under instruction the aircraft can descend to 300 feet

**In that situation there is a real danger of one of our models coming into contact with the full size aircraft, that must be avoided at all costs**

The Club Committee have developed an **alarm system** that is intended to alert any model flyer of the presence of a full size, low flying aircraft overflying our field, and they are to descend immediately to a safe altitude, or land

The alarm system comprises a warning siren, located in the Transmitter pound, the siren can be activated by any one of 3 pushbuttons :

1. At the entrance to the transmitter pound
2. At the East end of the Club Room veranda
3. At the Western charging and models assembly area

**If you notice a low flying full size aircraft approaching our Flying Field, alert the model flyers by activating the alarm**



Entrance to the Transmitter Pound



East end of the Club Room veranda



Western Charging Station and models assembly area

## Club Polo Shirts

A few members have asked about the possibility of getting club shirts with the P&DARCS & 50<sup>th</sup> anniversary logos.

An example of the shirt is shown below

Costs for the shirt & logo's is approx. \$49 and another \$8 if you'd like your name embroidered on. (price is based on number ordered, hence approx. price)

If you would like to get a shirt, please email [webmaster@pdarcs.com.au](mailto:webmaster@pdarcs.com.au) or speak with me, Daniel Jenkins before April 12<sup>th</sup>



## For Sale



Brand new **"Scanner"** assembled and ready to fly. Wing Span 54" (1400).

**A Great Intermediate Trainer or Sports Aircraft.** Has 4 brand new Futaba 3001 Servos already installed as well as a near new OF 45FSR engine. Just add an Rx & Rx Battery and you are away.

**\$400**

To be sold for a member who has retired from the Sport.

9898 4379

## SECRETARY'S REPORT

General Meeting Held Saturday 2<sup>nd</sup> March 2019  
At Burley Field Cardinia.

**Meeting Opened:** 1.02 pm

Chair for this meeting: P. Harris (Treasurer)

**Members Present:** 16

**Apologies:** A.Foley, A Coleman, M. Smith

**Visitors:** Phil Spence (ACT) Chris Henry, (Albury)

**New Members:** Rob Barbuto

**Minutes of previous Meeting:** Motion that the minutes of meeting of the previous be accepted Moved D. Glossop, Seconded B. Reynolds Carried

**Business Arising:** Nil

**President:**

- The president was absent due to Bush fires in his area.
- Peter Harris was chairing the meeting and advised members of the success of the Scout Visit organised by our Club President.

**Secretary:**

**Correspondence In.**

- Various Invoices
- Advice from Sam 600 that the Roy rob to be cancelled due to high temperatures forecast for the day

**Correspondence Out**

- Letter to IMAC advising their request for a June Comp had been given the go ahead

**Treasurer:**

The Treasurer provided report on club finances. Club income is over budget by approximately \$2000 at this stage. We are also over our budgeted member numbers. So, all good news.

**Registrar:**

- Absent.
- Current member numbers 162 plus a new application posted in this month's newsletter.

**Facilities:** Absent

**Field**

- Some small cracks appearing but are being filled with soil as they appear Lime is also being applied to any cracked areas.

**Safety:** Apology

- Chair reminded members that we now have max ceiling height of 1500 feet
- Daniel explained that the Low aircraft warning alarm had been built and would be installed in next week or two. Guide lines on use would be put in next newsletter.

**Editor**

Club Library is getting frequent use so give it a go if you haven't already. There are a range of books and magazines in there. If you haven't already noticed it resides in the alcove in the club house.

**Webmaster:** Club compute is misbehaving a little may need some replacement parts.

**Social**

Rotec Radial engine visit is now unlikely as they advise they no longer do tours. Don will look into possibly touring Tyabb again mid-year.

**Club Captain:**

Event is at Northern Flying Groups field (State Field) 6<sup>th</sup> 7<sup>th</sup> April. Participants all organized but would love to see club members out at the event to support our entrants. Team will most likely camp overnight and have a BBQ at the field

**General Business**

**Monty Tyrrell. Date 24<sup>th</sup> March 2019**

- There will be a working bee on the Saturday before the event, 23<sup>rd</sup> March. Field will be closed to flying during the working bee.
- Have received many good prizes from sponsors so far
- Encourage club member to come along and fly, not just spectate. The event is a fun fly event so no competition pressure. Would like to see big support from members to help make this a big event as it traditionally was.

**Club Rule changes.**

Daniel advise that there have been some minor changers to the Club Rules. These will be published in the next newsletter. Changes are mainly to incorporate our 1500-foot height clearance, small change to Fire Ban rule Inclusion of silver wings and small amendment to procedure for selecting active runway.

**Peter Harris** advise that Peter Pine in Qld has parts for the Parkzone Radian.

**Angelo Favaloro** suggested that the "capping" on the club sign be reinstalled to prevent Birds Sitting on it and defecating on it.

**Meeting Closed 1.46 pm**

Next Club meeting Saturday 30<sup>th</sup> March 2019

**David Walsh Secretary**

# REGISTRAR

## Registrars Report – February 2019

No new Members this Month

Soon I will start work on the renewals for 2019/20 so ensure that I have a **current addresses** for you!

### Inductions/Orientation

The keys and membership cards for new members required to attend an orientation session are held in the club. Any committee member will be pleased to run through this session with a new member on request and will then hand over their key, card and of course a smart Club Cap

### Membership Status

	Paid 2018-19	Unpaid	New 18-191
Associate	14	0	1
Full	91	9	2
Honorary	1	0	1
Junior	3	1	0
Life	3	0	0
Non-flying Full	0	0	0
Pensioner	24	0	0
Probationary	16	4	5
Prospective	10	2	9
Student	0	1	0
Spouse	0	1	0
<b>Total Paid</b>	<b>162</b>	<b>18</b>	<b>18</b>

Resigned – 5

Just for interest –The VMAA has 2316 full members and 100 junior members. We represent 6.7% of the state total.

**Rob Till** Registrar



## VMAA Trophy

6th To 7th April 2019

To be held at VMAA State Field  
Darraweit Guim



One week to go and we are off to The Northern Group State Field to defend the VMAA Trophy. It's always a great event with lots of interest and great camaraderie. Thankyou to all the members that have volunteered to represent the club and to those that have volunteered to help.

We have a very strong team once again, it would be great to return the trophy back to our clubrooms once again. I know it's a long drive but It would be great to see members supporting their team at the event and assist as mechanics, time keepers and judges.

Representing the club at this year's Trophy are: -

Combat	Chris Caulcutt
Helicopter Timed Event	Paul Webber
Helicopter/Drone Limbo	Noellie Sartorio
Scale Aerobatics	Cliff Mclver
Bomb Drop	Ba'Lint Banko
Thermal Glider	Steve Malcman
Fun Scale	Rolly Gaumann
Electric Glider	Glen Orchard
Fun Fly	Cliff Mclver
Sports Limbo	David Chivers
Musical Landings	Paul Somerville

P&DARCS will once again have a representative in all eleven events.

Rather than going to the local hotel, which is some distance from the field and not large enough to cater for everyone at the one venue, for Saturday night dinner we are considering having a BBQ dinner at the Field and camping at the field on Saturday night. If you are interested in being included in the catering for Saturday night please let me know. We would also like to inform the Northern Flying Group the number of members that will be camping over-night.

**VMAA TEAM CAPTAIN**

*Peter Harris*

# LITHIUM POLYMER BATTERIES ( LiPO's ) SOME BASICS



A typical LiPO battery 2.2 amp hour, 3 cell, 11.1 volts

## Why LiPOs Are Used

LiPo batteries are a type of rechargeable battery that has taken the electric RC world by storm, especially for planes and helicopters.

They are the main reason electric flight is a very viable option over fuel powered models.

RC LiPo batteries have three main things going for them that make them the perfect battery choice for RC planes and even more so for RC helicopters over conventional rechargeable battery types such as NiCad, or NiMH.

1. RC LiPo batteries are light weight and can be made in almost any shape and size.
2. RC LiPo batteries have large capacities, meaning they hold lots of power in a small package.
3. RC LiPo batteries have high discharge rates to power the most demanding electric motors.

These benefits are important in any RC model, but for airplanes and helicopters they are the reason electric flight has become so popular

Face it, electric cars and boats have been around for decades, it wasn't until LiPo battery technology arrived on the scene that electric planes and helicopters started showing up and have now surpassing nitro power in terms of power to weight ratios.

## Basic Construction

Almost every RC LiPo battery cell is packaged in an aluminium foil pouch, coincidentally called a pouch cell. The picture below shows a typical 2 cell LiPo RC battery pack.

Pouch cells are the perfect solution for building multi celled battery packs since the flat pouch cell can be stacked with no wasted air spaces like found within round celled battery packs. Of course since LiPo's use this light weight pouch instead of a metal can, less weight is the result making LiPo's the best choice over Li-Ion in a weight conscious application such as RC aircraft.



A typical LiPO ( pouch ) cell, 5 amp hours, beside a golf ball to judge size, The small tabs on the ends are the + and - electrical connections

## Handling Precautions

1. Be very careful to never let the main + and – leads touch or inadvertently plug them together, fire and brimstone will be the result
2. Be careful to not drop the battery on a hard surface, the cells can be damaged
3. Carry your LiPOs to the flying Field in a metal carrying case, Super Cheap Autos have good ones

## Testing Your LiPOs

There are a variety of battery testers on the market, most of the testers will do a check of the condition of a range of different battery types, including LiPOs, ( see the photo' below )

When testing your LiPO the tester will show you the amount of charge remaining in the battery as a percentage, ( % ) of full charge

**You should test your LiPO ;**

\* **Before you fly your model**, so you don't accidentally fly with a discharged LiPO, ( if you forgot to charge it ), and run the risk of a " dead stick " landing, and ruining your LiPO

\* **After you have landed your model**, to check that your flight timer is set correctly, (see the next page on the 80% rule )



A typical battery tester, set to test a LiPO, the display shows, it is set for LiPO, 3 cells ( 3S )  
The voltage is 11.8 volts

**The important display is it has 72% charge remaining.**

Notice the tester is connected to the little balancing plug from the LiPO, not the main power leads

## Using your LiPO's, ( making them last )



A 40 size electric powered biplane

A LiPO will heat up if it discharged under load to around 3.0 volts per cell - it will become very warm/hot and will shorten its life substantially.

### **A very good rule to follow here is the "80% rule".**

This simply means that you should never discharge a LiPo pack down past 80% of it's capacity

For example, if you have a 2000 mAh LiPo pack, you should never draw more than 1600 mAh out of the pack (80% x 2000). This is assuming a healthy pack as well that has the full 2000 mAh capacity (as LiPOs age, their capacity drops).

When flying a new model for the first time, you can easily work out much time to fly the model to achieve the 80% charge remaining

### **Here is how to do it**

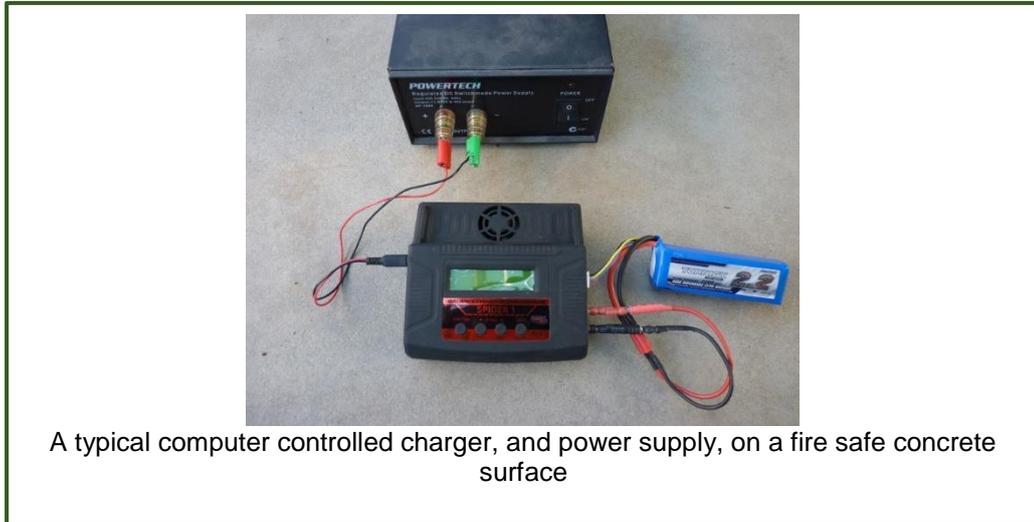
Using the timer in your transmitter, fly the model for a short time, say, 4 minutes, land immediately, and, using a LiPO tester, see what % of charge is remaining in your LiPO, so now you know by how much you can increase your flight timer

So, at the end of your next flight ( when your timer beeps at you ) you should have around 20% or so remaining in your LiPO

### **The four main things that shorten LiPo battery life are:**

1. **Heat**, provide good air flow over your LiPO
2. **Over Discharging**, fly your model in the normal manner for say, 4 minutes, land the model, use your LiPO tester to see what percentage of charge is remaining in the LiPO, judge from that how much more time you can add to your flight timer, to be within the 80% rule
3. **OVER Charging**, buy a computer charger and learn how to set it correctly, ask other modelers what is a good model / brand
4. **Inadequate Balancing**, your good quality computer charger will be equipped with a balancing socket, learn how to use it, and use it every time

## Charging And Balancing LiPO batteries



A typical computer controlled charger, and power supply, on a fire safe concrete surface

### Charge LiPO batteries on a fireproof surface, OR in a fireproof bag, and at least 1M from any combustible material

It is critical that you use a charger specified for LiPo batteries and select the correct voltage or cell count when charging your RC LiPo batteries

If you have a 2 cell (2S) pack you must select 7.4 volts or 2 cells on your charger. If you selected 11.1V (a 3S pack) by mistake and tried to charge your 2S pack, all the better computerized chargers sold these days will warn you if you selected the wrong cell count, and not start to charge

**Balancing is required on any RC LiPo battery pack that has more than one cell** since the charger can't identify from different cells and know if one might be overcharged even though the total voltage of the pack indicates otherwise.

Balancing ensures all cells are always within the safe voltage for each cell, so over charging or discharging of one or more cells won't ruin your battery pack

Note the small balancing lead plugged into the charger, behind the main battery leads, in the picture above

## LiPO Damage

### 1. Swelling



A badly swollen 6s 5000 mA hr LiPO pack, very risky to continue using this one

## 1. Swelling

LiPo cells can swell a little bit, especially if they are getting pretty warm during use.

It is actually somewhat normal (based on how hard you run the packs, the quality of the packs, and how much they heat up) and as long as it is very-very minor swelling & goes away after the pack cools down you usually have nothing to worry about.

### As packs age, the swelling can get worse

As a LiPo pack is nearing the end of its useful life it can show some very minor swelling that won't go away, even after the pack cools. This pack may still have some nice non aggressive flights left in it however, so treat it kindly with gentler flying / driving in its early retirement before sending it to the LiPo grave yard

If the LiPO pack is swelled up to the point that is tight as a drum, ( as shown in the picture above ),and very hot to touch, and it does not return to normal size when it cools, do not use it, **dispose of it**

## 2. Crash Damage



An impact damaged 6s 5000mAh LiPO pack  
The cells slammed up against the front bulkhead of the crashed model  
, ( it did not burn ! )

## Disposing Of LiPO Packs

Unlike NiCd or NiMH batteries, the contents of LiPO batteries are more environmentally friendly

1. If any LiPO cell is swollen or physically damaged do NOT discharge the battery, jump to step 5
2. Place the battery in a fireproof container or on a concrete surface at least 1M away from combustible material
3. Discharge the battery using a LiPO discharger, or use a lamp
4. Discharge the battery to 1.0 volts per cell or lower
5. Submerge the battery in a bucket of salt water, ( ½ cup of table salt per 4 liters of water ) use a sharp object and puncture the LiPO cells when immersed, leave the battery in the salt water for an extended period, ( two weeks )
6. Remove the battery from the salt water, wrap in newspaper or a paper towel, and place in normal trash

# LiPO fires

LiPO batteries can burst into flames giving off very intense heat

A number of modelers have lost their entire workshop and models in fires started by a burning LiPO

Others have had their house badly damaged, and some have had their car gutted

**NEVER :**

- \* Charge your LiPOs in your car
- \* Charge your LiPOs in your home
- \* Charge your LiPOs in your workshop without fire proofing the LiPO
- \* Charge your LiPOs in your model
- \* Allow your LiPO to be punctured, ( by chucking it into your toolbox )
- \* Allow the LiPO main cables to be shorted together, if that happens the cables will weld together, and LiPO will burst into flames

If you have one of your LiPOs catch fire, try to pick it up with a pair of pliers or tongs and place it quickly onto a fireproof surface, or, immerse it in water, this is usually difficult to do, try to chuck the lot outside

The only sure method to prevent property damage is to store your LiPOs in a fireproof container at all times

Also, as soon as you arrive home from flying, remove the LiPOs from your car, and store them in a fireproof cabinet in your workshop, such as a disposals filing cabinet, see photo on the next page

Also, if you are charging your LiPOs at home place all the equipment on a fireproof surface, in a metal box, as shown below, or on a concrete floor



A LiPO charging set-up on concrete pavers, for extra fire protection the LiPOs are placed in the little metal cash boxes, ( from Bunnings )

**If your LiPOs burn in one of these cabinets, the worst that can happen is you loose your LiPOs, and put up with lots of white smoke and stink**



Good fireproof storage, a disposals filing cabinet, from OP' Shop or Recycle Center Shop cost around \$ 15-



A set of 4 cell LiPOs in one of the cabinet drawers, the metal attaché case is from Super Cheap Autos, that is also used to take the LiPOs to the Flying Field

# From Our Flying Field



# P&DARCS CALENDAR FOR 2019

## March

30 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

## April

06 (Sat) - 07 (Sun) [VMAA Trophy \(Darrweit Guim\)](#)

14 (Sun) [Scale State Championships](#) Field Open: **Partial**

18 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

27 (Sat) [Twi-Fly](#)

## May

04 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

23 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

## June

01 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

20 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

22 (Sat) - 23 (Sun) [IMAC Competition](#) Field Open: **Partial**

## July

06 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

18 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

## August

03 (Sat) 1:00 pm - 2:30 pm [Club Meeting & AGM](#)

22 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

## September

07 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

19 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

## October

05 (Sat) 1:00 pm - 2:30 pm [Club Meeting & Coop AGM](#)

24 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

26 (Sat) [Spring Clean & Working Bee](#) Field Open: **No**

## November

02 (Sat) [Twi-Fly](#)

02 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

05 (Tue) [Melbourne Cup Aero Tow](#) Field Open: **Partial**

09 (Sat) 2:00 pm - 4:00 pm [Mini Working Bee for Rally](#) Field Open: **No**

10 (Sun) [P&DARCS Scratch / Kit Built Scale Rally](#) Field Open: **No**

21 (Thu) 7:30 pm - 10:00 pm [Committee Meeting](#)

## December

01 (Sun) [VPA Pattern](#) Field Open: **No**

07 (Sat) 1:00 pm - 2:30 pm [Club Meeting](#)

14 (Sat) [P&DARCS Christmas Dinner & Twi-Fly](#)

The logo for SC Models features the letters 'SC' in a large, red, stylized font. Below 'SC' is a silhouette of a fighter jet. Underneath the jet, the word 'models' is written in a blue, lowercase font.

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[kevin@scmodels.com.au](mailto:kevin@scmodels.com.au)

Andrew Smallridge 0417378753  
[andrew@scmodels.com.au](mailto:andrew@scmodels.com.au)  
[www.scmodels.com.au](http://www.scmodels.com.au)

Quality at the Right Price

The Motorfly logo consists of the word 'MOTORFLY' in a blue, italicized font with a red underline, set against a dark blue background.The Dura-GRIT logo features the word 'Dura-GRIT' in a bold, black font with a gear icon to the right, all on a yellow background.An advertisement for Dragon R.C. featuring a central image of a quadcopter drone. Surrounding the drone are smaller images of various RC models, including a biplane, a car, and a boat. The text 'Dragon R.C.' and 'Dragonrc.com.au' is at the bottom.

Dragon R.C.  
Dragonrc.com.au

An advertisement for Addies Hobbies with a yellow background. It features the text 'Addies HOBBIES' in a large, stylized font, followed by 'RC world of fun' in a blue font. Below this is the address '641A Nepean Hwy Carrum 3197 Victoria' and phone number '03 9773 3955'. At the bottom, there are icons for various RC models: airplane, boat, kite, helicopter, and car.

641A Nepean Hwy Carrum 3197 Victoria  
03 9773 3955 addieshobbies.com.au

AIRCRAFT BOATS KITES HELIS CAR!

An advertisement for My Tool Store with a wood-grain background. It features the text 'MY TOOL STORE' and 'Make it YOUR tool store too!'. Below this is a blue rectangular logo with the letters 'MTS' in a large, metallic font and 'mytoolstore.com.au' below it. The logo is flanked by two wrenches.

MY TOOL STORE  
Make it YOUR tool store too!

MTS  
mytoolstore.com.au



**Next Club Meeting, Saturday 30th March 2019  
At Burley Field, 1pm start**

**P&DARCS Newsletter**  
Pakenham & District Aircraft Radio Control Society

If undelivered return to  
P&DARCS.  
Po Box 131  
MDC Cranbourne 3977