



Next Meeting: Friday April 24th at 7:30 @ the Trinity Lutheran Church, 2949 Alamo St., Simi Valley

President.....	Todd Krueger.....	805-526-4099.....	tskrueger@sbcglobal.com
Vice President.....	Keith Martin.....	805-231-2937.....	mkeithmartin@yahoo.com
Treasurer.....	Bob Fricke.....	805-527-2032.....	bob@kjfl.com
Membership.....	Andy Weir.....	805-583-1746.....	acweir@dslextreame.com
Secretary.....	Glen Roe.....	805-583-3280.....	itvguy@pacbell.net
Safety Officer.....	Bill Prosser.....	805-304-0212.....	eastonbatman@gmail.com
Newsletter.....	Ken Milbrett.....	805-405-0314.....	kmilbrett@roadrunner.com
Communications.....	Bill Luckie.....	805-404-4252.....	bluckie@simivalleyflyers.com

Simi Valley Flyers
 P.O. Box 812
 Simi Valley, CA 93062

The Simi Valley Flyers club is incorporated as a nonprofit organization. We are a radio control model airplane club founded in 1965. We have a 450 ft. by 50 ft. asphalt runway with a 150 ft. by 65 ft. pit area. Our flying field is located inside Oak Park which is owned by the County of Ventura. The Simi Valley Flyers operate, maintain and improve this facility under a lease agreement with Ventura County.

All inputs to the Newsletter must be sent in by the 18th of each month to the following E-mail address: kmilbrett@roadrunner.com



The President’s Message – Todd Krueger

Hello SVF,

Thank you Bill Luckie for handling the road grading, we can all appreciate the smoother ride to the top. I also want to thank Bill Reilly for mowing the weeds. The field and surrounding areas are getting very dry, please take extra care and make sure we put the fire extinguishers and shovels out before you start flying,

Thank you.

Please join us at the next meeting as we will be discussing the needs for our upcoming 50th anniversary fun fly scheduled for June 20th. We will be discussing

and scheduling a work party to have the field in tip top shape. We have also sent a request to the county to have the lower part of the road graded and have invited them to join us for the big event.

See you at the field
 Todd



The Vice President's Message – Keith Martin

Nothing for this month.

See you at the field

Keith



Simi Valley Flyers General Meeting 3/27/15

Board in attendance:

Todd Krueger

Bill Luckie

Keith Martin

Glen Roe

Bill Prosser

Andy Weir

Bob Fricke

7:35 PM - Meeting called to order

- No visitors in attendance
- Todd reminded everyone to be careful about snakes. There was a rattlesnake spotted on the runway recently.
- Todd noted the windsock at the field must be replaced soon. Bob Fricke has a replacement windsock that will be brought up to the field. It will be replaced in the couple of weeks.
- Todd reminded the membership to go to the AMA website and submit a letter about the upcoming FAA rule change. There is a form letter that can be used on the website.
- Todd sent a copy of our 2015 AMA insurance to the county. The county has everything they need from the club at this point.
- Keith discussed the upcoming Fun Fly on the 4th. The BBQ menu will be the standard hamburgers and hot dogs for lunch unless there are better suggestions.
- Keith discussed the options for the 50th anniversary cake for the June Fun Fly. It was decided this will be a chocolate cake by informal vote of the membership in attendance.
- Bob reported the club treasury as the end of February is \$21,256.37. For February we are down \$157.82.
- There was graffiti found on the road fencing. Bob filed a graffiti report with the police through their automated system. The graffiti will be painted over this weekend.
- Andy reported the membership at 96 members.
- The membership approved the meeting minutes published in the newsletter from February.
- Bill Prosser reminded the membership that it is everyone's responsibility to be sure the rules are followed. If someone is not following the rules, please give them a friendly heads up.
- Bill Luckie showed off the 50th anniversary stickers. Everyone in attendance received a sticker.
- Club member Jack Fase passed away this month. The club sent flowers to the family.
- Bill Luckie received a quote of \$830 to have the road repaired. Todd made a motion to approve up to \$900 for road repair. The membership unanimously approved to allocate the money.
- Bill Luckie recognized Bob Reilly for mowing the field this week.
- Bill Luckie brought up that we should trim the top of the trees around the shed. This should help the weather station wind readings. Glen Roe volunteered his telescoping saw for this effort.
- The membership voted on the safety rule change as published in the February newsletter. The vote to approve the rule change was unanimous.
- The membership voted on the Correction rule changes as published in the February newsletter. The vote was 12-1 in favor of the rule change.
- No show & tell for the meeting.

8:10 PM - Meeting adjourned

Some Pictures from Our April 4th Fun Fly





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StorTronics® was founded in 1981 and is located in
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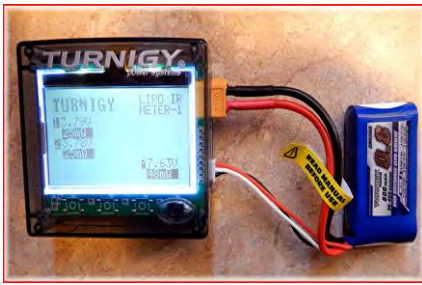
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Here is an article submitted to me by Ron Scott. If anyone wants to know how to find the true “C” rating of their LiPo battery pack then read this. The number the manufactures state may not be true...



The LiPo “C” Rating Mystery

By Patric Harris (edited down by Ron Scott)

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Let’s analyze a typical 10 pound electric plane being used today. If you were to attempt to determine the amount of current we are drawing from our packs, a ton of variables come into play. Most of us will stick an ammeter on our planes when we first build them to determine the maximum amperage draw, but is this really the number we should be looking at in relation to our batteries?

The amount of amps we draw from our packs is a huge variable, but I can say that on average, most of us pull from 65 to 80 amps as our maximum average draw with larger planes. Flying Masters with a plane close to 11 pounds gets me in the 75 amp range. For the sake of simplicity, let’s use the 75 amp draw figure, which is probably pretty close for most of us. In our calculation, we determined that our 25 C battery can supply 125 amps and we only need 75, so we are good to go...right?

As a friend of mine often says, “maybe yes, maybe no”. The fact is, we are now just starting to understand LiPo’s and how to get the most from them. **One of the most important and often misunderstood aspects of LiPo’s is “internal resistance”**. For simplicity sake, we can think of a LiPo cell as having a built in resister that impedes the flow of current. Technically LiPo cells don’t have a true resister built in, but act close enough for our use. The biggest downside to a LiPo cell with a high resistance is the generation of heat. That heat being generated in our packs is energy not available for our use and can also be highly detrimental to the pack itself. Long story short, one of the most important measurements we can take from our batteries is “internal resistance”, but how do we go about doing this? It’s important to realize that internal resistance of a LiPo is extremely temperature dependent. In fact, so dependent, readings from other than a controlled environment should be suspect.

Here is a web site with a tool for LiPo Performance Calculations: <http://www.jj604.com/LiPoTool/> (See Page 3)

At first glance the calculator looks pretty simple, but in fact some pretty serious number grinding is going on in the background. One thing you will note is to check the packs at 72 degrees for consistent readings. Packs should be kept at that temperature for at least an hour, preferably two before taking measurements. Trust me, it can make a major difference in your readings. OK, now back to our earlier example from above. Let’s assume our 5,000 mah packs have a fair amount of use on them. Upon checking internal resistance we find most cells are running around 3.5 MΩ, but one cell is 6 MΩ. It’s important to understand batteries in series like we use, act on the “weakest link” principle. Simply stated, forget the cells at 3.5. The only one that matters is the one at 6 MΩ (weakest link). So we now go to our on-line spread sheet and plug in 6 as our highest resistance reading cell along with 5,000 pack size. The spread sheet now shows us two values. The first being a “Figure of Merit”, which is just a number to allow us to compare various packs. A FOM (Figure of Merit) number of “1” tells us we have a perfectly acceptable pack. A number below “1” is below par and above “1” is exceptional. The next piece of data on the spread sheet is “Maximum Current in Amps. This is the maximum average current draw on this pack to prevent damage. So you now see we have a FOM of .4 and a Maximum Current draw of 71 amps. What that tells us is we have a pretty borderline pack with a FOM of .4, but more importantly we can only draw 71 amps on average from this pack without damage, but remember in our above example, we need 75 amps. If we take the 71 amp figure and divide it by the pack size in amps (71 / 5), you have a result of 14.2 MΩ. Guess what boys and girls...**that 14.2 is the true C rating of that pack!** But it says 25C on the label! But we need to pull 75 amps and our pack can only supply 71. Well that’s

not quite true. We can likely pull 75 amps, but what happens to the battery if we pull more than 71amps. You guessed it...heat. Now here is the real problem as we pull more amps than the pack can safely support it creates deadly heat, which damages the cell and in turn raises the internal resistance of the offending cell, so it becomes a “snowball affect”. As the pack heats, it can damage the cell, raising its internal resistance, which lowers the available amps, which creates more heat, which damages the cell, which...on and on and on.... until...poof. Ever notice how quick a pack can go once it starts downhill? Now you know why.

Using a good meter or charger that measures cell resistance, gives us a great tool to manage our packs to the fullest. Most of us run several cells in series, so by staying on top of your batteries you can match up your best packs. A lot of times, one pack will show weakness before the other. So, are the readings from our chargers Or IR meters accurate? I will say, yes and no. I have checked my IChargers and found the numbers to be pretty close, but every now and then I will get a reading of one or two cells that are way, way off. Another issue is temperature of the packs being charged. My chargers are in the garage and hardly close to a 72 degree controlled environment. The Cell Pro chargers read internal resistance as they are being charged, which will change the temperature of the pack, which of course can affect an accurate IR measurement. So for my money, yes I think it's worth the few bucks to buy a Good Charger that measures internal resistance.

Winter Flying

When LiPo's are left in the cold winter temperatures, their internal resistance can go up drastically. What happens is we plug in our cold battery, push it flying aggressively and damage it and we didn't even know it. What appears to be the reason is the very high internal resistance of a cold battery limits the available current draw. When we exceed that available draw, the pack heats quickly and is damaged. Interestingly, as the pack heats up, the internal resistance drops and all appears to be fine. It appears the damage is done in the early part of the draw. Common reasoning would say “no big deal, as the pack warms up from use it will be fine”, but by then the damage is done. Recently I checked the internal resistance of two packs in the house at a stable 72 degrees. We were experiencing unseasonably cold weather so I stuck the two packs in my truck overnight and checked them the next

morning with a pack temperature of 45 degrees. Inside, the highest cell's internal resistance was around 4 MΩ. The next morning that same cell read over 9 MΩ. These were 4,500 mah packs and if you plug the info into the on-line spreadsheet you will see the Maximum average current draw to avoid damage is only 55 amps (WWWOOWWW – that's a significant degradation). If we were to pull 70 to 80 amps from those packs, major damage is likely going to occur and what about the affective “C” rating of these packs? If we divide 55 (amps) by 4.5 we get a number of 12.22. At that temperature the true “C” rating of these packs is only 12.22 and they are labeled as 30 C packs. The result is, temperature is a major factor in determining true “C” rating. I'll bet no LiPo marketing department wants you to know this stuff now do they?

Go ahead and toast your batteries and buy more! But we have all heard LiPo's like to be cool. Yes they do, but only in storage, not when we first put them in our plane.

Bottom line is keep your packs as warm as possible in the winter before use and I mean warm.....like 65 degrees or higher. I have one of those 35 dollar infrared thermometers from Harbor Freight that does a good job checking packs. I now leave my packs inside the truck and get them out one at a time when I need them. If it's really cold, I leave the truck running and the heat blasting on full for a while to get them nice and toasty. Another trick is to toss in a couple of chemical hand warmers in your battery box. In our area we don't see the sun much in the winter, but for you that have that luxury, placing your packs in direct sunlight (usually the dash board) really helps toasty them up. If you are so inclined, this link will detail some of the technical side to this issue.

<http://forum.giantshark.co.uk/viewtopic.php?f=121&t=1280>

Until next time,

Pat,

Discharge Calculator

Small LiPo Calculator

Version 1.1 7-28-13 MRF

Lipoly Objective Performance Calculation Tool

Measured Cell IR =	5.6	<--- Enter cell measured internal resistance here. If multi-cell pack, use highest measured cell value
Cell Capacity =	2200	<--- Enter cell capacity in mAh units here
Figure of Merit (FOM) =	0.97	<--- Figure of Merit (FOM). To be used as basis of comparison to other packs and to track pack performance over time
Max. Current (A) =	49	<--- Maximum recommended average current draw to prevent pack damage

Notes:

- To use calculator, simply insert the measured cell internal resistance and cell capacity in mAh into appropriate (green) cells.
 To ensure highest possible accuracy of results, cell IR must be taken when cell has been allowed to settle at 72°F (22°C) for 1 hour minimum.
- FOM = Figure of Merit. Figure of Merit is a calculation that uses measured cell internal resistance and normalizes it to cell capacity. It is very useful when comparing packs of different sizes and from different manufacturers. The larger the calculated FOM, the better. For more background information on FOM, go here: <http://www.rcgroups.com/forums/showthread.php?t=1392662&page=1>
- Maximum recommended current draw is a conservative calculation of maximum average current that one should stay within to limit possibility of damage due to overheating during discharge. Use this value as an initial baseline and adjust if you find that temperature is within a reasonable value in your particular model. Recommended maximum temperature for best longevity is no greater than 140 degrees F (60°C).

If you have some packs that have been evaluated using the tool be sure to share them on the data thread →

Database

There is a discussion thread about this method of estimating a sensible maximum average current here →

Discussion

Note that the display of "True C" that was in an earlier version of the tool has been removed as some people were misinterpreting its significance. You can easily calculate an equivalent C value for the recommended maximum current by dividing that current by the pack capacity in Amp Hours.

Picture File: Pictures/Rc-Resistance/Health Calc.JPG





2015 CALENDAR - R/C FLYING EVENTS
(VENTURA COUNTY & AROUND By: Ron Scott as of 1-29-15)



- April** 24-26 Wings over Prado – Scale Airplane Fly-in @ Prado Airpark, Chino, CA www.pvmac.com
- May** 9 Fun Fly – Apollo Field - Valley Flyers www.valleyflyers.com
10 Mother's Day
15 Electric Fly (indoor) @ Simi Valley Rec Center 5005 LA Ave. @ 7:30 PM
16 L A Jets Spring Fly-in – Valley Flyers www.valleyflyers.com
16 -17 RCX – Model Airplane Expo @ Orange County Fairgrounds - www.rcx.com or 317-236-6515
23 Electric Fun-Fly & Glowpower $\leq .15"$ + BBQ @ Comets Field – Lake Casitas
17 Warbird Day – Camarillo Flying Circus
?18 Quickie 500 Pylon races — Whittier Narrows <http://www.sgvrc.org/>, - Park 818-554-3517
24 T-28 Race @ Santa Barbara RC Modelers www.SBRCM.org
22-24 Float Fly – Visalia Russell Pond – for directions - www.CVRCSoaring.com
21-24 Memorial Day weekend – Giant Scale Fly-in – Castle Airport (near Merced)
Central CA Modelers. Contact Scott at scottmalta@comcast.net or 209-617-5789
- June** 5-7 Q40/Q500 Pylon racing – Valley Flyers www.valleyflyers.com
? 7 IMAC flying competition @ Fresno - www.mini-iac.com
?14 IMAC flying competition @ Riverside - www.mini-iac.com
14 Father's Day
19 Electric Fly (indoor) @ Simi Valley Rec Center 5005 LA Ave. @ 7:30 PM
20 Simi Valley Flyers - Fun Fly, BBQ, & Swap Meet
20-21 Western States All Electric Fun Fly – Apollo Field - www.valleyflyers.com for details.
21 Quaker Fun Fly & Balloon drop - Comets Field - Lake Casitas
28 4 rounds of Combat – Camarillo Flying Circus
- July** 11 Swap Meet & Fun Fly - Valley Flyers Apollo Field www.valleyflyers.com
?13 Swap Meet San Diego – Don Madison
18 L A Jets – Valley Flyers – Apollo Field www.valleyflyers.com
19 Fun Fly – Camarillo Flying Circus
25 Warbird day & BBQ + Swap Meet @ Comets Field Lake Casitas \$10 Entry fee includes lunch
31-Aug 2 Tri-Valley R/C Modelers Giant Scale Fly-in – Santa Maria–Chuck Barnes–
www.trivalleymodelers.com
- August** 1 All Scale Event – Valley Flyers - www.valleyflyers.com
?2-3 Glider – Slope racing @ Grass Mountain www.socalsloperacing.com
8 Simi Valley Flyers - Fun Fly, BBQ, & Swap Meet
?9-10 Pattern Contest at Miramar, San Diego (Bill Wallace; bwallace@bandag.com)
15 Fun Fly & Swap Meet - Valley Flyers Apollo Field www.valleyflyers.com
16 T-28 Races – Camarillo Flying Circus
22-23 Camarillo Air Show
- September** ?1 Swap Meet & Dawn Patrol Contest @ Hemet Model Masters-www.hemetmodelmasters.org
5 All Electric Fun Fly – Valley Flyers www.valleyflyers.com
?19-20 Float Fly @ Lake Castaic Lower Lake– Canyon Crosswinds www.canyoncrosswinds.com
25-27 Float Fly @ **Lake Mc Swine near Merced**... Reservations – 209-354-2954
27 T-28 Race @ Santa Barbara RC Modelers www.SBRCM.org

?26-28 Lake Hemet Float fly – Hemet Model Masters – www.hemetmodelmasters.org
26-27 Point Mug Air Show – with the Blue Angels

October

?3-4 Classic Pattern Contest at Pomona (Robert Fish, akmotov@pacbell.net)
2-4 Glider Festival @ Visalia, CA (www.CVRCSoaring.com)
?3-5 Tucson Aerobatic Shootout - www.desertaircraft.com
?5 Quickie 500 Pylon races – San Gabriel RC League – Whittier Narrows Rec. Park 818-554-3517
10 Simi Valley Flyers - Fun Fly, BBQ, & Swap Meet
11 Try & Fly- Public open house - Valley Flyers – Apollo Field www.valleyflyers.com
?11-12 Pattern Contest at Sacramento (SAM; Frank Capone; crcfrank@sbcglobal.net)
17-18 Float Fly @ Comets - Lake Casitas – Camping, BBQ & Big Raffle
18 Combat – 4 rounds – Camarillo Flying Circus
25 Electric Fun Fly - Valley Flyers – Apollo Field www.valleyflyers.com
23-25 Float Fly @ Visalia – Russell Pond for directions check www.CVRCSoaring.com
?23-26 Giant Scale Air Races - Rabbit dry lake (Unlimited planes flying @ 150 + MPH) www.usrainfo.org

November

7 Swap Meet & Fun Fly -Valley Flyers – Apollo Field www.valleyflyers.com
?8-10 Float Fly, @ London Bridge, @ Windsor Beach Park, Lake Havasu, Az.
(Desert Hawks Club) Web-site www.deserthawksrc.org
14 LA Jets - Valley Flyers – Apollo Field www.valleyflyers.com
15 Warbird Day – Camarillo Flying Circus
20-22 Float Fly @ Comets – Club members only
22 T-28 Race @ Santa Barbara RC Modelers www.SBRCM.org
23-25 West Coast all Electric RC Event – Fly-in @ Prado Airpark, Chino, CA www.pvmac.com
?24 T-28 Day – Camarillo Flying Circus

December

6 Toys-for-Tots Fly-in – Valley Flyers – Apollo Field www.valleyflyers.com
13 Holiday party – Simi Valley Flyers
17 Comets Christmas party -
25 Santa Claus brings new stuff to replace all the planes & engines that Murphy broke during the year.