THE FLIGHTLINE

RRCC 54 YEARS

AMA CLUB 668 SINCE 1968
RACINE RADIO CONTROL CLUB INC SINCE 1968

RRCC May Issue
May 15, 2022 Newsletter

WE ARE ON THE WEB
www.racinercclub.com

Club Officers

President
James Litwin
262-637-2787 (Cell 262-939-7926)
president@racinercclub.com

Vice President
Roger Nickolaus
414-761-1907 (Cell 414-405-8004)
vp@racinercclub.com

Secretary/Treasurer
Bob Johnson 847-421-5494
secretary@racinercclub.com

Field Chairman
"Hoss" Hossalla
414-651-0968
field@racinercclub.com

Safety Officer
Dan Pozel
262-939-0548
safety@racinercclub.com

Tractor Chairman
Eric Armantrout
262-498-1035
tractor@racinercclub.com

Compost Director
Jerry Rose
262-498-2816
compost@racinercclub.com

Webmaster
Justin Francisco
414-484-4574
web@racinercclub.com

Newsletter Editor
Dennis Vollrath
Cell 262-994-6342
newsletter@racinercclub.com

Racine R/C Club Meeting Minutes
April 10, 2022
Time: 1:00 PM
Location: R/C Flying Field

Open Meeting - Jim opened the meeting at 1:00PM. 19 members present.

Welcome - New Members & Guests – Four members of the Boy Scout Troop 336 in Burlington, WI were present and joined the club as junior members. They are working toward an aviation merit badge by building an RC airplane and learning to fly. Led by their Scout Master Justin Francisco. Good Luck to you all!

Aaden Meyer
Jacob Marson
Wesley Lindstrom
Dylan Keckhaver
L.J. Francisco (current member)

Minutes - Last Meeting – There were no changes to the minutes from the last meeting.

Reports

President- Jim Litwin had nothing new to report this month.

Vice President- Roger Nickolaus had nothing new to report.

Secretary/Treasurer-Bob Johnson
Current membership as of the April meeting.

Senior Members	37
Open Members	17
Junior Members	5
Total	59

The General Fund Continues to be healthy. We are

well positioned to deal with any expenses (planned or otherwise) for 2022.

Our 2022 AMA Charter has been posted in the club house.
$50.00 was paid to Pat's Services for service to our outhouse.

News Editor-Dennis Vollrath had nothing new to report.
Field Chairman- Hoss mentioned he has a friend with a front-end loader that volunteered to help us move gravel around. Hoss will roll the field once the grounds dry out. We need to move gravel from the grassy areas back to the parking lot and general clean up.
Tractor Chairman- Eric will install batteries in the tractor.
Web Master-Justin Francisco reported our website is updated with photos from the banquet and Facebook traffic continues to be strong.
Safety Officer-Dan Pozel had nothing new.

Compost Director-Jerry Rose reported the compost site opened this Wednesday. He also made one more reminder that your composted date is your responsibility and if you can't make it it's your responsibility to find a sub.
Old Business- Nothing to discuss.
New Business – Thank goes out to Chuck Roberts for keeping the club stocked with bottled water and Mike Stein for Sunday doughnuts.
New Pilots – None
Show & Tell – Dennis Vollrath showed a new A123 battery case he can now make with his 3D printer replacing the shrink tube covering.
Steve Navone maidened a new Skywing Edge 540. The flight went very well.
Raffle Drawing – $23.00 was taken in this month. Chuck Roberts won and contributed $17.00 back to the club.
Close Meeting – Jim closed the meeting with a reminder the next meeting will be Sunday May 15th.

Jim's Corner

Spring is certainly here. Lots of rain, wind, and cloudy skies. Perfect weather for ducks, but not for flying.

When the weather has been nice there have been a lot of maiden flights and familiarization flights, especially for those taking planes to the Joe Nall event in South Carolina, which is taking place as I write this article.

From the email notifications that I sent out, I contracted COVID, and was unable to go to the Joe Nall event as planned. I got it somewhat on the bad side and went thru a series of IV Infusions of medications at the Kenosha Aurora hospital. Doing pretty good not, but really feel bad about missing out on the trip.

Some of you may have heard me talk about it, but anyway, here it is for all. The new Director of Public Works contacted me prior to the opening of the Compost Site to get a better understanding of our role and to insure we were ready to do our part for the 2022 season.

I explained to him that Jerry Rose had the schedule filled and we were ready to proceed. During our discussion I discussed the problems of members having to stand in the rain and hot sun when working the compost site, and that a rain / shade covering would be greatly appreciated.

He said he would look into it. Well, if you look over at the compost site now, you will see a new shed with a canopy covering the south side to provide shade and rain protection. A big thank you to the Village!

We will be getting into the summer mowing season of the flying field. I will have a roster at our next meeting if you are interested in signing up.

We are probably looking at Saturday, June 4th as the day to take down the shelter sides. If we get the help we typically do it should only take about 1 ½ hours. Please mark you calendars.

I'm going to end this article on my last day of quarantine by asking everyone stay safe.

See you all on Sunday, May 15th for our monthly meeting.

Have Fun and Fly Safe
Jim Litwin
President

Dennys Stuff

More on the electronic stuff follows in this newsletter.

FYI, many of our RC club members have gone to using either those A123 receiver battery packs or (In my opinion) the less reliable LiFe battery packs.

These A123 cells are hermetically sealed in an aluminum jacket, and are very well constructed internally. Yes, I've cut open several of these cells over the years.

Those LiFe cells are encased in a plastic baggie, and are not hermetically sealed. A pin hole or similar failure in that plastic baggie allows the cell to "Dry Out" over a year or so, causing the cell to open circuit. I've seen a half dozen LiFe battery pack failures in our club over the past several years.

Now, for the basic construction of a receiver battery pack. As many RRCC members know, you can build up a battery pack by placing the cells end to end, or in series.

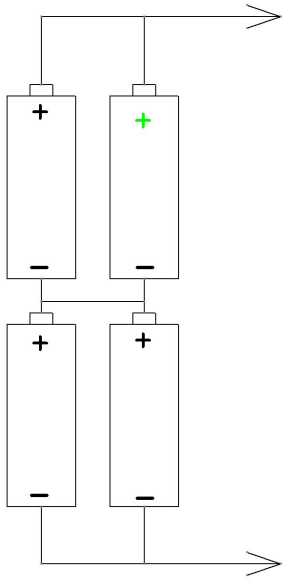
Doing so, the voltage on the battery terminals adds up, so two A123 cells end to end in series results in 3.3 Volts plus 3.3 Volts or 6.6 Volts for the entire battery pack.

However, the battery ampere hour capacity in MilliAmpere Hours DOES NOT CHANGE!

The current A123 cells are 2500 MilliAmpere Hours, (Mah) so two in series comes to the same 2500 Mah.

IF you put two cells side by side, with the two negative ends together and the two positive ends together, you've put them in parallel.

That results in the same 3.3 Volts DC for the battery pack, but the MilliAmpere Hour capacity adds up, so you have the 2500 Mah for the first cell plus 2500 Mah for the second cell adding up to 5000 Mah for the 3.3 Volt DC battery pack.



If your model is true giant scale size, you may need to go to a receiver battery pack of 6.6 Volts DC at 5000 Mah. This requires four A123 cells, a pair of two cells in series, wired in parallel.

These giant scale models

that are running many high powered servos may have a continuous drain on the receiver battery pack on the order of 5 or 6 Amperes.

A 6.6 Volt 5000 mah A123 receiver battery pack can easily handle discharge currents on this order. That pack can handle 80 Amps.

These A123 cells do have a significant negative issue though. Their voltage discharge curve is FLAT! There is only a percent or two difference in their voltage between 80% of charge, and 20% of charge.

This makes it not possible to determine how much is left in the battery pack after a bunch of flights. Not to worry though, I've published this document several times that shows how these A123 cells should be used in your model airplanes.

I've posted information on the use of these A123 or LiFe two cell receiver packs as a reply to user questions many times in RCGroups. Perhaps, a general thread will help on how these cells work and can be used for receiver/servo purpose.

Those A123/LiFe's are a near perfect replacement for a 5 cell Nih AA size receiver battery pack. But, for the larger models, these LiFe/A123's far outperform the Nih packs when pulling higher currents.

I've got test results on my Western Mountain CBA battery analyzer that shows what happens to a Eneloop battery with 6 Amps load. It nearly instantly dropped below 4 Volts DC on a 5S Eneloop.

Not to mention what effect temperature has on these Nih packs. Their performance really drops off at below freezing temperatures. They are not safe to use at temperatues below freezing.

I've also got test results on a 2S A123 pack at 32 degrees F. It's voltage dropped an extra 0.45 Volts DC at 12 Amps, compared to 70F. These A123 cells work very well at temperatures well below freezing.

The A123's and similar LiFe's have a lot of very good qualities when used for receiver power. Voltage sagging with heavy duty servos pretty much becomes a non-issue.

I've checked A123's at 32 degrees F, and they still worked very well. There is no issues with fire hazard, no issues with storage voltages, no issues with charging procedures. That's the good news.

But A123's do have a very flat discharge curve, varying only a percent or three of voltage from 80% to 20% state of charge. And, using a multimeter is not very useful to determine the battery packs state of charge. (Nothing new here, Nih packs are somewhat similar with the voltage versus state of charge)

So, other means must be used for these packs. These cells are very efficient in recharging. If you pull 1000 mah OUT of the pack, it will take around 1050 mah to recharge it.

I use my "50%" rule on these cells for receiver power. That is to ***NEVER, NEVER, NEVER*** take more than 50% OUT of the battery pack during any day's flying. For a 2500 Mah A123 pack, that drops its EFFECTIVE capacity to 1250, for a safety factor of two.

So, to determine what is safe, take your

A123 pack, charge it up, and go fly, putting three flights on your pack. Then, field charge the pack and check how many milliampere hours were put back **INTO** the pack. If the receiver pack took 460 Mah, that is 460/3 or 153 mah PER FLIGHT.

With the effective capacity of 1250, divide that by the 153 mah per flight, and you get a maximum of 8 flights, with the safety factor of two.

If you're in need of more capacity, either field charge after 8 flights, or use a dual A123 2500 Mah pack. For 30 to 50 cc gassers, my RC members are using dual 2500 A123 packs, each with their own receiver switch, each with their own connection to the receiver power input.

They are finding that each flight pulls around 250 MilliAmpere Hours OUT of the battery pack. With dual A123's and 5000 Mah capacity, they have enough battery capacity to pretty much fly all day.

Now, after the days flying is finished, take your model home, charge the receiver battery(s) with any quality charger. Record the number of MilliAmpere Hours it took to recharge it. Once your charger shows that **BOTH CELLS** hit 3.60 Volts DC, it's charged. Simple as that.

Now, the model is ready to go next day, next week, next month, don't matter much. A123's hold some 95% of their charge after a full year on the shelf. And, they will last many years in service. As a comparison, a two cell 2500 Mah A123 pack weighs about one ounce more than a five cell "AA" size Nih pack.

Your results can and will vary. Run your own numbers on each type of model you're flying. Flying a sailplane with small control surfaces will require far fewer mah per flight than a 50 cc, 3D gasser with its giant control surfaces that can rotate 45 degrees.

A couple of my RC members are flying 150 cc twin cylinder gassers, and are using a pair of 2S2P 2500 A123 packs.

These packs are wired with #16 wire, leading to a power panel for distribution to the large number of high powered digital servos used on these size models.

The average current pulled by the receiver and servos on these models is some 5 Amperes. Yes, 10,000 mah is overkill for receiver power on these giant models, but they will never have to worry about sufficient power to the receiver, and those power boxes that are used with them.

Just a note for those still flying with the NiMH (Nickel Hydride) receiver battery packs. These battery packs are quite fussy on how they are charged with a fast charger.

These fast chargers monitor the voltage of the NiMH battery pack while it is charging the pack. The charger is watching for a very slight 0.5% drop in the battery packs voltage at full charge.

It is easy for the charger to shut off prematurely, leaving you with a half charged battery pack.

And, last but not least, it is a real **NO NO** to charge those NiMH battery packs in parallel for technical reasons. Charging them in parallel can easily result in one NiMH battery pack getting a full charge, while the other NiMH battery pack is only partially charged. Or not charged at all.

DennyV, RRCC editor.

RACINE RC CLUB 2022 CALENDAR

January 1	**Saturday**	**9:00 AM**	**New Year's Day, "First in the Air" Event**
January 16	**Sunday**	**1:00 PM**	**Club meeting - Flying Field**
February 20	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field -**
March 1	**Tuesday**		**Lock codes changed**
March 5	**Saturday**		**Banquet**
March 20	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
April 6	**Wednesday**	**12 – 6 PM**	**Club Compost Duty Starts**
April 10	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
May 15	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
June 4	**Saturday**	**8:00 AM**	**Shelter take down**
June 12	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
July 17	**Sunday**	**11:00 AM**	**Club Picnic at Field - No Meeting**
August 21	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
August 28	**Sunday**	**9:00 AM**	**RC Club "Open House"**
Sept 18	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field** **Get proposed rule changes submitted**
October 1	**Saturday**	**Noon**	**Deadline for submission of Proposed Field Rule & By-Law Changes**
October 1	**Saturday**	**8:00 AM**	**Shelter setup**
October 16	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field**
Nov13	**Sunday**	**1:00 PM**	**Club Annual Meeting - Election of Offic ers; Vote on proposed Field Rule & By-Law changes**
Dec 7	**Wednesday**	**12 – 6 PM**	**Last day Club Compost Duty**
Dec 18	**Sunday**	**1:00 PM**	**Club Meeting - Flying Field – Establish- Membership Dues schedule for next year**
Jan 1, 2022	**Sunday**	**9:00 AM**	**New Year's Day, "First in the Air" Event & Noon lunch (Electric Sunrise - Gas/Glow 9:00 AM)**

The following RRCC members have volunteered to be a substitute for compost duty. Contact them to work out the details

Steve Knackert 262-497-2824 Justin Francisco 414-484-4574

Date+K20I29A1:KA1:K39	Time	Name(1)	Name(2)	Substitute	Date	Time	Name(1)	Name(2)	Substitute
04/06/22	12-2	(Hoss) Hossalla	Gerald Bublavy		08/10/22	12-2	Bob Johnson		
04/06/22	2-4	(Hoss) Hossalla	Gerald Bublavy		08/10/22	2-4	Bob Johnson		
04/06/22	4-6	Justin Francisco	Gerald Bublavy		08/10/22	4-6	Roman Kirykowicz	Helmut Schmidtke	
04/13/22	12-2	Roger Nickolaus	James Martinich		08/17/22	12-2	Raymond Redlin Sr		
04/13/22	2-4	Roger Nickolaus	James Martinich		08/17/22	2-4	Jim Smith		
04/13/22	4-6	Justin Francisco	James Martinich		08/17/22	4-6	Wayne Greisen		
04/20/22	12-2	Roger Nickolaus			08/24/22	12-2	Terry Peterson	Matthew Holl	
04/20/22	2-4	(Hoss) Hossalla	John Boticki		08/24/22	2-4	Dennis Vollrath	Matthew Holl	
04/20/22	4-6	Justin Francisco			08/24/22	4-6	Wayne Greisen	Matthew Holl	
04/27/22	12-2	Charles Roberts			08/31/22	12-2	Terry Peterson		
04/27/22	2-4	Rich Smentek			08/31/22	2-4	Dennis Vollrath		
04/27/22	4-6	Dan Pozel			08/31/22	4-6	Wayne Greisen		
05/04/22	12-2	Steve Knackert	Bill Flannery		09/07/22	12-2	Terry Peterson		
05/04/22	2-4	Rich Smentek	Bill Flannery		09/07/22	2-4	Dennis Vollrath		
05/04/22	4-6	Dan Pozel			09/07/22	4-6	Dan Pozel		
05/11/22	12-2	Charles Roberts	Paul Willems		09/14/22	12-2	J Fisher		Steve Knackert
05/11/22	2-4	Rich Smentek			09/14/22	2-4	James Houtsinger		
05/11/22	4-6	Charles Roberts			09/14/22	4-6	Eric Armantrout	Ron Dixon	
05/18/22	12-2	Steve Knackert	Dennis Krzyzanek		09/21/22	12-2	Buzz Paricka	William Wampler	
05/18/22	2-4	William Bylsma	Dennis Krzyzanek		09/21/22	2-4	Buzz Paricka	William Wampler	
05/18/22	4-6	Trygve Smalley			09/21/22	4-6	Bill Flannery		
05/25/22	12-2	Michael Stein	Douglas Karge		09/28/22	12-2	Buzz Paricka	William Wampler	
05/25/22	2-4	Michael Stein	Douglas Karge		09/28/22	2-4	James Houtsinger		
05/25/22	4-6	Michael Stein	Douglas Karge		09/28/22	4-6	Arland Matson		
06/01/22	12-2	Jerry Rose			10/05/22	12-2	Charles Brzezicki		
06/01/22	2-4	Jerry Rose			10/05/22	2-4	Charles Brzezicki		
06/01/22	4-6	Trygve Smalley			10/05/22	4-6	Charles Brzezicki		
06/08/22	12-2	Chris Stein	Paul Willems		10/12/22	12-2	Donald Parkinson		
06/08/22	2-4	Chris Stein			10/12/22	2-4	Donald Parkinson		
06/08/22	4-6	Chris Stein			10/12/22	4-6	Donald Parkinson		
06/15/22	12-2	Jerry Rose	Dennis Krzyzanek		10/19/22	12-2	Herbert Ludowieg		
06/15/22	2-4	Ray Fisher			10/19/22	2-4	Herbert Ludowieg		
06/15/22	4-6	Ray Fisher			10/19/22	4-6	Herbert Ludowieg		
06/22/22	12-2	Steve Knackert	Arland Matson		10/26/22	12-2	Carl Bergquist		
06/22/22	2-4	William Bylsma			10/26/22	2-4	James Houtsinger		
06/22/22	4-6	Trygve Smalley			10/26/22	4-6	J Fisher		Steve Knackert
06/29/22	12-2	Pete Luks		Steve Knackert	11/02/22	12-2	Jim Litwin		
06/29/22	2-4	William Bylsma			11/02/22	2-4	Jim Litwin		
06/29/22	4-6	Roman Kirykowicz	Helmut Schmidtke		11/02/22	4-6	Jim Litwin		
07/06/22	12-2	Pete Luks		Steve Knackert	11/09/22	12-2	Carl Bergquist		
07/06/22	2-4	Jim Smith			11/09/22	2-4	John Boticki		
07/06/22	4-6	Bob Johnson			11/09/22	4-6	James Strelitzer		
07/13/22	12-2	Raymond Redlin Sr	Paul Willems		11/16/22	12-2	J Fisher		Steve Knackert
07/13/22	2-4	Jim Smith			11/16/22	2-4	John Boticki		
07/13/22	4-6	Roman Kirykowicz	Helmut Schmidtke		11/16/22	4-6	James Strelitzer		
07/20/22	12-2	Pete Luks		Steve Knackert	11/23/22	12-2	Carl Bergquist		
07/20/22	2-4	Eric Armantrout	Ron Dixon		11/23/22	2-4	Arland Matson		
07/20/22	4-6	Eric Armantrout	Ron Dixon		11/23/22	4-6	James Strelitzer		
07/27/22	12-2	Richard Stapleton	Peter Redel		11/30/22	12-2	Ronald Hayes		
07/27/22	2-4	Richard Stapleton	Peter Redel		11/30/22	2-4	Ronald Hayes		
07/27/22	4-6	Richard Stapleton	Peter Redel		11/30/22	4-6	Ronald Hayes		
08/03/22	12-2	Raymond Redlin Sr			12/07/22	12-2	Steven Navone		
08/03/22	2-4	Ray Fisher			12/07/22	2-4	Steven Navone		
08/03/22	4-6	Ray Fisher			12/07/22	4-6	Steven Navone		