

TRI COUNTY RC CLUB

THE FLY PAPER

Charter number 434, March 1968

www.tcranj.com

Reminders:

- **Membership Dues** Renewals have been e-mailed out. *If you want your membership card mailed back to you, include a Self Address Stamped Envelope.*
- Be sure your AMA and FAA is **current**.
- Anyone wanting to pay their 2021 dues, in cash, send me a text and we can arrange to meet at the field. 732-586-9779, Bruce G

President Eric Fagan is inviting TCTC members to a scheduled Zoom meeting that will be held on Thursday February 25th at 8:00 PM

President Eric Fagan is inviting TCRC members to a scheduled Zoom meeting

Topic: TCRC February Meeting, Thursday

Time: Feb 25, 2021 08:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/81002102187?pwd=Q2U1TzFzTkQ4L1BWN1JvVjJUSHVxdz09>

Last months virtual meeting was well attended and ran smoothly.

Next Meeting is
February 25th, 2021

It will be a virtual zoom meeting and the link will be e-mailed out again the day of the meeting.

The Club website is Up and running

The new address is www.tricountyrc.com

It is a work in progress and will take a little more time but so far it looks great !

Night Flying has nothing scheduled until March, Hopefully the weather will start improve. More information to follow.

>**A Heli Training program** is in the works and may be available in early spring.



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Some new Sources and Product Updates

E-flite Night Radian LED Update.

The Radian model by e-flite has introduced many of our club members to the excitement of night flying. Its bright multicolor LED's create a spectacular light show in the sky once the sun goes down. One limitation that I hear is that the model's stock LED controller does not allow you to change the light sequence during flight.

A company called Wingnut Tech has introduced a new controller that can be easily swapped out for the stock LED board with no soldering required.

The LED controller comes preprogrammed with a variety of light shows, some are simple and some are move the lights around the aircraft.

Although the stock Night Radian FT2.0 m is a lot of fun, being able to control the lights during flight adds another level of "cool" to the night flying experience.

Check out the \$35. after market controller from Wingnut Tech and see if its for you.

Www.wingnuttech.com



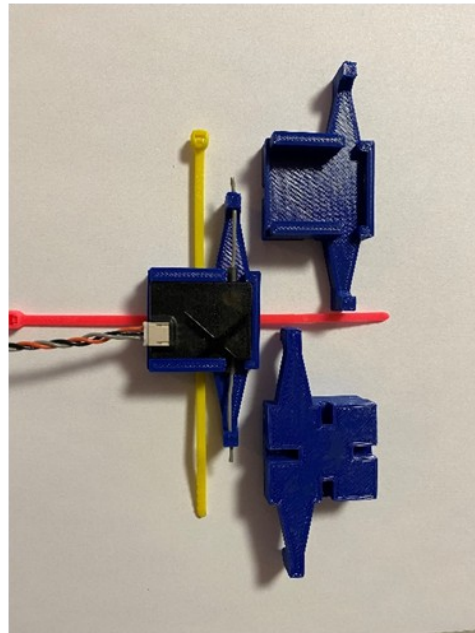
John D. gets ready for a night flight. With his Radian

Morgan's Custom 3D Printing -

John Donnelly

If you need 3D printed parts to hold various items on your aircraft, I have another source. Morgan's Custom 3D Printing, <https://morganscustom3dprinting.com/> a small cottage business located in Dexter, Missouri, that started in 2018 making drone parts.

I was looking for a holder for my Spektrum Remote receivers when I came across a story in Model Airplane News about the business. So, I went on-line and found they have 23 different items for sale from 3D parts for



holding different items in your aircraft to decals, vibration isolators, servo support plates, and shirts and hats. Most items are made to fit various manufacturer's components, and you can select between six different colors.

I needed some Spektrum remote receiver

holders as I didn't want to use Velcro, double sided tape, or glue directly on the receivers. So, I bought these parts. They can be mounted to the structure by Ty-Rap two different ways; taped, or glued. The receiver fit very snugly to the point where if I need to remove it, I think I may need to break the mount. The holes for the antennas are a perfect fit. I think I would have preferred a sleeve over the antennas, but in reality, it is not necessary. It takes a couple of days from order to shipment, as it seems the items are printed on demand. Now to order holders for my single antenna receivers.

Whats happening



And the “Dumbass” of the Month “ award goes to Kevin Johnson. The attendees of the virtual meeting voted unanimously for Johnson.

As the story goes, Kevin crashed his heli while he was doing a few flips with a lower head speed. He didn't realize that he hit the *recovery switch* and kept trying to fight the heli which was now in recovery mode.

To add to the mishap, he managed to crash into the on-deck table and cut Ricky Criqui's new, *waiting to be maiden*ed heli in half at the boom.



Hugo Gernsback demonstrating his television goggles in 1963

Nostalgia: Hugo Gernsback demonstrated his television goggles back in 1963. It looks like today's FPV eyewear.

The Greenwood Lake
Air Show
is scheduled to take place on August
13-15th 2021.
Located in nearby West Milford, NJ



For more information go to
www.greenwoodlakesairshow.com

LiPo Battery Basics

Understanding the technology and its safe use.

With the club getting quite a few new members this past year I have decided to revisit some information on LiPo Batteries. Maybe some of us need a refresher on the subject too.

Information is taken from an article from the AMA magazine, written by Greg Gimlick.

Safety First

There are many rumors and truths about the safety of Lipo batteries. Incorrect chargers, incorrect voltage cutoffs and discharging at levels the packs couldn't support are causes of major concern.

Lipos have become a safe suitable source of power, but here are a few simple rules for increasing safety

- Always store batteries in a fire-safe container.
- Always charge with an appropriate charger designed for LiPos
- Always follow the manufacturers instruction for charging and discharging rates.
- Always size the pack according to its usage.
- Never overcharge and never overdischarge.
- Never used puffed packs
- Never use a pack that has visible damage (dents, cracks, etc)
- Never charge a pack unattended.
- Never disassemble or reconfigure a damaged pack.

with his helicopter.

Most accidents involving LiPos packs are the result of not following one of these rules. Understand the charger you're using and follow the manufacturers guidelines and they will serve you well.

Understanding the Labels.

Labels contain plenty of information, but understanding them is sometimes confusing. A few simple definitions may help .

- 3S, 4S, etc: battery packs are composed of a number of cells in series and this number represents that. If a pack is listed as a 3S pack, then it has three individual cells connected in series within the pack, each with a nominal voltage of 3.7 volts. The pack's total will then be listed as an 11.1 volt pack. A 4S pack would be 14.8 volts etc, (four cells x 3.7 volts =14.8)
- Capacity: the capacity rating of a Lipo battery tells its output potential, of how long you can take power from te battery at a given rate before it reaches the cutoff voltage, or is discharged. The faster you take power from the battery, the less time it will last. Many times battery capacities are listed in milliamper hours (mAh) instead of ampere hours (Ah) this is just a metric conversion to

a smaller unit of measure.

- Discharge rating: "C" represents a measure of the rate at which a battery at which a battery can be discharged relative to its maximum capacity. If the battery is discharged at a rate higher than the discharger rating, the battery may be damaged, or worse, could pose a safety hazard, like a fire. If a battery discharge's rating is 15 C, it means that the most power that can be drawn from it a one time is equal to 15 times its capacity. The discharge rating listed on the battery label is based on what the manufacturers believes the pack will handle during discharge without degrading the pack. These discharge rating, sometimes mistakenly referred to as C ratings, can be optimistic and are best used as a guideline. Packs with a higher discharge rate have a lower internal resistance (IR), which is a good thing.
- Internal Resistance: this represents the internal resistance of a cell or pack. Some chargers will test the IR for each cell within a pack during the charger cycle. As internal resistance increases, the battery efficiency decreases. So as a general rule, the lower the resistance the more punch a battery will provide. Its nice to know, but not something to get hung up over as a beginner. As a rule, battery pack labels are often the manufacturers attempt to put its product in the best light. A pack rated as a 65C pack and sporting small -gauge wires to the connectors won't really handle that amount of current. Sometimes packs come with large-gauge wires, but are soldered to tiny tabs inside the pack. Which negate the benefit of those monster wires. Shop carefully and use the best battery you can afford.



Memory

If you're beginning to fly-electric powered aircraft and your only experience has been with Ni-Cad or NiMH packs, you're probably wondering about memory effect. The good news is with LiPo packs there is no such concern.

Sizing you Battery Pack

If you're new to electric-powered models, you will probably follow the manufacturer's recommendations for an appropriate pack for your aircraft. That's what you should be doing. As you expand your hangar, you may want decide to add a bigger battery or need something that isn't specified. You should do some research to get a feel for what type of current the setup will pull

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under full throttle and size your pack accordingly. If your airplane requires a 3S setup using a typical 2,200 mAh pack and you change to a “hotter” motor, meaning one that is more powerful and will pull 35 amps, that pack won’t be happy. Lets look a why. The 15C pack is technically capable of pulling 33 amps (2,200 mAh x15 = 33,000 mAh), so your 20 amp requirement was well within its limits, Now looking at the new setup with the motor requiring 35 amps, you see that the pack is undersized, if only by a couple of amps. That’s enough to cause problems that can be costly in the long run. It’s recommended buying a quality LiPo pack what is well beyond the projected requirement of the setup. Running a pack at its limits will guarantee a short life and wasted money.

Charging and Storage

Always balance charge when you can. Balance charging evenly distributes the energy stored in the battery across the multiple cell inside. This will prolong your pack’s life and ensure better service life. You can get away with fast charging at the field without balancing if your regular routine is balance charging at home. There are debates about charging and storage levels, but the safe bet is to store batteries at some thing other than fully charged or fully discharged. Most good balancing chargers offer a “storage” mode that takes them to a level of approximately 3.8 volts per cell. The important thing is not to leave them fully charger or discharged for long periods of time. Its safe to store your batteries in a safe storage container. There are many storage available, and one inexpensive storage container can be purchased from Harbor Freight.



The Secret to Long Battery Life

The secret, at least for your batteries, is to charge to 4.1 volts per cell as opposed to the full 4.2 volts per cell, and never discharge them to full discharge level. Working your packs in between the two ends of the charge/discharge levels will greatly increase their lifespan. Allowing your packs to get hot while charging or discharging is one of the most likely

causes of degradation.

Connecting It.

The connectors you choose for your aircraft are as important as any other piece of equipment. Connectors are designed for certain sizes or gauges of wire. They are rated for specific maximum electrical throughput, just as a wire is. If more electricity is put through a connector that it was designed for, resistance and heat will increase. Most beginner models come from the factory with some type of pre-installed connector. This connector may or may not match the battery you have. Adaptors are available for many types of connectors and existing connector on models or batteries can even be completely replaced with a connector of your choice. Many modelers with multiple aircraft try to standardize their connections and batteries.

Low-Tech Tester

Your hand is one of the best meters to gauge how your setup is doing. The magic temperature for a danger threshold is 140 degrees F on LiPo packs, and this is darn hot if your touch it. If your battery feels too warm, it probably is. Heat is wasted energy and a sign of trouble. If your motor is too hot to touch, it might be over-propped. If the ESC is too hot to touch, its probably undersized, as is the battery if its hot. If your connectors are warm, they’re a choking pint in the circuit causing high resistance and lost efficiency. Heat is a natural by product of our setups, but we need size things accordingly to keep it at a minimum.

And in Conclusion

Don’t make your modeling world more complicated than it has to be when trying electrics. Information is all over the internet, as are rumors and conjecture. “Experts” and even experienced modelers may tend to load up newcomers with more information that they need to get started, and do it out of their exuberance for the hobby. Do your homework, study the manufacturers' information and try to make the best decision you can. Don’t obsess over it! Most Plug-N-Play systems work well and are well matched. There's plenty of time to venture out on your own. Don’t over-test your batteries on the bench. That does not replicate actual flight conditions.

Hope this article was helpful. BG

FOR SALE

Phone, text or e-mail Alex if you are interested in any of the items. 732-816-1810, tercy2k@aol.com



FMS Olympus ,
Brand New in
unopened box.
\$325.00

Blade Nano QX
RTF
Complete \$75.00



5 Second Fix
\$10.00



Club Guidelines

Be sure you have your information on the aircraft including AMA number and FAA Identification number.

To register your aircraft/drone go to www.faa.gov.

The charge for this registration is \$5.00 for 3 years.

Support your club....



Tri-County R C Club hats are available. They are \$15.00 each. And are available at all the meetings or text Bruce G at 732-586-9779 and he can bring them to the field.

FIELD STIPULATIONS

- The town of North Brunswick has stated that a maximum of ten persons at the field.
- Masks are to be worn all the time.
- Parks Department people and Police will be patrolling and enforcing the rules.

Reminder: Club Meetings are the last Thursday of the month. Except November and December, those will be announced.

The next meeting will be on February 25th 2021.

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The Fly Paper

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