



**Desert Hawks RC Club**

## **NEWSLETTER**

FALL 2024

### **DESERT HAWKS RC CLUB INC.**

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Website: <https://deserthawsrc.club/>

Academy of Model Aeronautics CHARTER #1545

### **REMINDER**

Club membership meetings are held  
on the 2<sup>nd</sup> Saturday of the month, unless  
otherwise noted.

### **Club Officers**

#### **Board of Directors**

President: Bill Roberds 360-460-1014

Vice President: Rob Rinde 928-855-8782

Secretary: Carol Rinde 928-855-8782

Treasurer: Peter Gonzalez  
Safety Officer: Jerry Morris 928-846-1088  
Member At Large: Larry Salsberry 509-378-0851

### **Committee Chairs**

Crawler Vehicles: John Hiss 208-670-3576  
Flight Instructor: Larry Salsberry 509-378-0851  
Field Marshal: Bill McMilon 928-727-5166  
Helicopter Area Director: Brian Fernandes 928-706-6085  
Membership: Carol Rinde 928-855-8782  
Newsletter Editor: Bill Tucker 719-207-5244  
Racetrack Chairman: Rob Rinde 928-855-8782  
Webmaster/IT: Carol Rinde 928-855-8782

### **President's Message:**

Wow! good to have a newsletter again, special thanks to Bill Tucker for stepping up.

The end of September and all of October the heat here was very oppressive. Any flying was done at dawn or not at all. The grounds look good and our runway did well through the summer. I noticed the wash at the end of our runway was starting to encroach on the steep bank. Long story short we fixed it with the help of Dub Campbell, long-time friend of the club. The oval track has been busy and looks great John Orell and crew have been busy on the maintenance and upgrades and we will be meeting soon with the long car track folks soon. Jason Wade has donated a complete solar array to the club and we will be planning the installation this month. I'm looking forward to 480V 3-phase power soon.

We have been seeing a lot of jet turbines planes lately, very fast and almost exciting as watching our Apprentice fleet. The club will be hosting a senior group from a home here for some flying fun and demonstrations -- we will have some pictures to share next month. The club will be featured in Havasu Living magazine this month so check it out.

That's all for now. Thanks for being a member!

Bill Roberds,  
President, Desert Hawks RC Club

### **MEMBERSHIP**

On October 12, 2024, the general membership voted to increase the dues for 2025. **Dues will be \$100 for an individual membership and \$120 for a family membership. Junior members are still free.** We now have a one-page renewal form for use if none of your information has changed from 2024. Starting November 1st, to renew a membership you have three options: 1) come to a general membership meeting; 2) mail in your renewal; or 3) renew online. There are also application forms available at the field under the Cliffhanger, as well as forms at the end of the membership dues/forms section of the Desert Hawks website you can print and fill out.

**You can now renew your membership for 2025. To remain an active member, you must renew by December 31, 2024.**

## **CLUB CALENDAR**

**Sat. November 9, 2024 – General Membership Meeting 9:00am under the Cliffhanger at the field. Nominations for the Board of Directors for 2025 will be held at this meeting. Please plan to attend.**

**Sat. December 14, 2024 – General Membership Meeting 9:00am under the Cliffhanger at the field. Please plan to attend.**

## **FAA STUFF**



The Desert Hawks RC Club's application for the FAA-Recognized Identification Area was approved by the FAA earlier this year. As a result, those operating unmanned aerial vehicles within the boundaries of the Desert Hawks airfield do not need a Remote ID Broadcast Module in their aircraft. However, all pilots still need to carry registration cards for TRUST and an FAA Drone pilot registration card. So if you somehow don't know about these requirements, read on.



Have you taken the FAA **TRUST** (The Recreational UAS Safety Test) exam and have the certificate with you when flying? There's no failing – it's free, easy and informational. And it's an FAA requirement to have the certificate with you when operating RC aircraft. Fines for noncompliance can be significant. The AMA is a test administrator, and you can take it by going to <https://trust.modelaircraft.org/>.



Also, be aware it is an FAA requirement to label all of your aircraft with your FAA pilot number and carry proof of FAA registration with you when flying. I also recommend printing your FAA number, AMA number, name and cell phone number on labels and place them in a visible spot on each of your aircraft. In the event of an accidental fly-away, there's a good chance the person finding the aircraft will call the number.

The FAA defines all unmanned aerial aircraft as "drones". So to fly legally you must register as a drone pilot with the FAA on their "DroneZone" website: <https://faadronezone-access.faa.gov/#/>. It costs \$5 and is valid for 3 years.

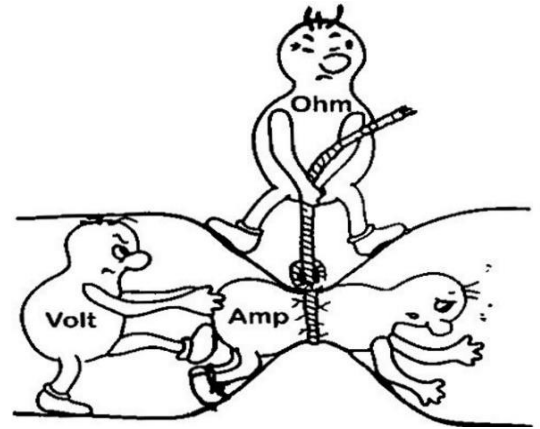
## **BATTERY BASICS**

### **About Volts, Amps and Ohms**

To help with understanding a discussion about a battery circuit, think of this: volts are pushed (by the battery), amps are pulled (by the electric motor and servos), ohms is resistance in the circuit (like wire diameter and length), and watts is the power created (like horsepower).

### **“C” Ratings**

Most batteries, especially LiPo batteries, have a “C” rating prominently placed on the wrapper. The C rating is the amount of energy the battery can safely discharge, represented as a multiple of its overall capacity. For example, if a 3000 milliamp-hour (mAh) battery (or 3 amp-hour) has a C rating of 40, it should be able to discharge up to 40 times 3, or 120 amps continuous discharge. However, be aware that vendor’s C ratings are often inaccurate – they are often used just as a marketing tool. There’s a way to determine a battery’s true C rating, but let’s leave that discussion for a future column. For now, know that there are responsible battery vendors who print more accurate, tested C ratings on their batteries.



### **Battery Types**

There are several types/chemistries of rechargeable batteries in use in our hobby these days. For this discussion we’re excluding the old Nickel-based batteries (Nickel Cadmium, Nickel Metal Hydride) and some of the newer, more esoteric lithium formulations (Cobalt, Manganese, Titanate, Nickel Cobalt Aluminum). This discussion will focus on the newer lithium batteries most often used in our RC hobby.

We all know about Lithium Polymer (LiPo) batteries. There are also High Voltage Lithium Polymer (LiHV), Lithium Ion (Li-Ion), A123 (a patented Lithium Iron Nano Phosphate) and Lithium Iron Phosphate (LiFePO<sub>4</sub>, often shortened to LiFe or LFP). There will be other chemistries in our future, but for now we’ll limit this discussion to these readily-available types.

### **LiPo Batteries**



These batteries are a type of lithium ion battery. They use a polymer gel electrolyte instead of a liquid electrolyte. Because of their high amperage output capability and available capacities, they are very suitable for the power systems in RC electric-powered aircraft and cars. The minimum cell voltage is generally accepted to be 3.7 volts. Going below this is when damage to the battery starts to occur. To avoid damage, always balance charge these batteries. It is also recommended to use a maximum charge rate of 1C (or for a 3000mAh LiPo, 3 amps) to extend their useable life. The downside to LiPo’s is they can catch fire when charged or discharged too quickly, shorted or otherwise damaged in some way. These should be discharged to around 3.8

volts per cell for storage. Normally charged to 4.20 volts per cell, there are high voltage versions (LiHV) that can be charged to 4.35 volts (see next paragraph). Note: never charge these types of batteries unattended!

## LiHV Batteries



These batteries are the same chemistry and construction as LiPo batteries but have premium cells that are capable of being charged to a higher voltage. While standard LiPo batteries can be charged to a maximum of 4.2 volts per cell, LiHV can be charged to 4.35 volts per cell. This amounts to about a 15% increase in voltage and capacity over a LiPo battery. LiHV battery packs are generally more expensive than standard LiPo battery packs. These batteries can be charged using regular LiPo charger setting to 4.2 volts per cell but can also be safely charged to 4.35 volts using chargers with a LiHV setting.

Regular LiPo batteries must not be charged to LiHV levels or they can be damaged; in worst case scenarios they can explode or catch fire. Also, if using LiHV battery packs in your model, make sure that your ESC is capable of handling the higher pack voltage.

## Li-Ion Batteries



These batteries currently have higher energy capacity per given size than LiPo's, but with less maximum current capability. In other words, there's more energy per ounce of battery, but it must be drawn at a lower rate. Whether or not they're right for your vehicle depends on the battery and how much current it draws. Some of us fly long-duration FPV aircraft and use Li-Ion batteries because they have more energy density than the same weight in LiPo's. But the RC vehicle's power needs and the Li-Ion battery's capabilities must be carefully considered to avoid

overloading and damaging these batteries. Most mainstream chargers have a setting for Li-Ion, which require a different charge profile than LiPo's. And Li-Ions should never be discharged below 2.5 volts per cell or life/performance will be affected.

## A123 Batteries



A123 batteries can output a very high current but have a low capacity for their weight. These can easily crank out 30C continuous amps and burst to 60C without any damage. They are comparatively forgiving and flexible batteries. They can be charged at up to 30C without damage and will not start on fire. These batteries are normally charged to 3.6 volts per cell but will drop very quickly to their nominal voltage of around 3.35 volts per cell when under load. Unlike LiPo's and Li-Ion's, their voltage doesn't drop much in use -- they will output their nominal voltage until they are very close to being completely discharged. A

charger's LiFe setting is used to charge these. Most often used to power receivers and servos, these can be stored up to 10 years fully charged without damage, unlike LiPo, LiHV and Li-Ion batteries. And their aluminum case has a better chance of coming out of crashes undamaged than soft-cased batteries like LiPo's.

## LiFe/LFP Batteries



These batteries have the same chemistry as A123 batteries, but do not use A123's patented Nanophosphate technology. As a result, they cost less and have less maximum current output than A123 cells. These have similar peak voltage and discharge curve as A123's and are among the safest, most environmentally-friendly lithium-based batteries. They can be stored for long periods of time fully charged and have a longer cycle life than Li-Ion batteries. Many RC pilots use



these to power receivers and servos, as they are capable of fairly high output current. These are often used in RC transmitters.

## FIELD SAFETY & ETIQUETTE ("Let's Be Flowers, Not Weeds!")



If you have joined Desert Hawks in the past few years, fly aircraft and have not watched the **NEW MEMBER ORIENTATION VIDEO**, or if you would just like a refresher, please go to our website at [deserthawksrc.club](http://deserthawksrc.club) and watch it. It contains important information regarding our club safety practices and procedures all members are expected to know and follow.

Please be considerate to other members. Here are some points to think about when you are flying at the field:

### **Parking**

- Park by the restrooms (2nd row of parking) if not flying. When finished flying and all parking slots are taken, please move your vehicle.
- Don't park in handicapped spots in you don't have a handicapped placard.
- Don't park in large scale area if you don't have a large-scale plane or a trailer.

### **Flying**

- Avoid arming your aircraft in the pits -- it can be dangerous to you and others.
- Do not stand on the runway beyond the solid runway edge line while taking off, flying or landing.
- No taxiing behind the solid white runway edge line. This includes all aircraft.
- Announce your intention to other flyers before entering or crossing the runway to retrieve a model. When doing so, do it as quickly as possible. This is not the place to contemplate life.
- Only use an arming table (those located immediately behind the flight stations) when you are preparing your model for flight. If the arming tables are all in use and others are waiting to fly, disarm your model and move it behind the fence to the pits after your flight. This gives those waiting to fly the chance to use it.
- Be aware of busy times at the airfield when other members are waiting to fly. Don't be an airhog! Give others the chance to have some flying time as well.

## TRACK REMINDERS

For those members using the oval and/or short course tracks, please remember to turn off the water before you leave.

## ENTRY GATES

Last but not least, someone has been hard at work damaging our gates. Over multiple occasions, several of our members have spent a lot of time repairing this damage. If you have seen who is doing this or have any information about it, please contact a club board member.

**Remember - last one out close and lock the gates!**

**And  
please,  
be safe!**

