

Raleigh Aero MasterS Newsletter



September, 2011

Hello everyone.

Club Meeting and Labor Day FunFly: Our next club meeting is Sunday, September 4, 2011 at 3:00PM. We will be having our Labor Day Weekend FunFly. Let's get together to discuss business and have a great afternoon and evening of eating, spending time with friends and flying.

Work Days / Mowing: Many thanks to the volunteers that come on work days to maintain the field. You are doing a great job of keeping our field in top shape and looking good for the rest of us. I have to say that we have one of the best facilities in the area. A great big shelter and asphalt runway. A nicely kept and manicured facility we can feel proud about. Thanks guys!!!

Next Work Day: In preparation for the RAMS Labor Day FunFly on September 4th, we will meet on **Saturday September 3rd at 9:00AM** for mowing and getting our field ready. Please bring your riding lawn mower, gas trimmer and blower if you can. Otherwise show up to help moving airplane stands and benches around. We will have the always entertaining after mowing debriefing. A reminder to our members that we do not fly while the riding lawn mowers are out in the field. The more we are helping, the sooner we get back to the business of flying. So, come and lend a hand!!!

Safety: Well!! We have done well so far in terms of no major injuries. Nevertheless, a couple of incidents at the field and in some members homes remind us that we need to be alert and be careful. So, we need to bring some points to our attention again.

- 1- As a safety club rule, we are not allowed to run ANY engine or motor on the shelter side of the fence. Fuel engines are only allowed to be run in the pilot side of the fence. Electric motors to battery connections are only to be done on the pilot side of the fence. Once you are done disconnect the battery and then you can bring the airplane to the shelter side of the fence.
- 2- No testing of electric or any kind of motor can be done on the shelter side of the fence.
- 3- Do not reach over a running propeller when adjusting the needle valve in a nitro or gas engine.
- 4- Don't stand in front of a running propeller. If it becomes loose from the motor shaft can be a projectile injuring you or bystanders. Also a propeller can break throwing a blade.
- 5- Do not reach over an electric propeller when connecting the battery.
- 6- Unless we are doing combat flying, no more than 4 pilots should fly at the same time.
- 7- Observe the pattern. If there is more than 1 pilot, fly in the same direction to reduce the chances of midair collisions. Especially the pilots that want to fly 3-D right on top of the runway, be aware to do your maneuvers when no airplane is passing over the runway and exit your maneuver in the same direction of the flight pattern.

Steve (vice-president) reminded us in the last meeting that an electric motor connected to a battery has to be always considered armed regardless of the safety features the speed controller may have. I personally made a mistake with this and got hit by a propeller in my right hand cutting me several times a couple of months ago. I am very aware of safety with electrics and still make these dangerous omissions. We also had a helicopter motor go off inside the shelter and the pilot could not find a way to shut it off. If

that helicopter would have gone full power it would have been very dangerous for all the people that was around. We are using more often gas engines with electronic ignitions. Even though these ignitions are computerized, when you turn on the ignition switch it can actually get the motor to have a spark and start if the cylinder is in the right position. Let's keep all these things in mind for everyone safety.

So let's go back to observing the general rule that no model aircraft can be powered on the shelter side of the fence for your own protection and that of others around you.

Stay away from the farming equipment and farm workers: A previous notification was sent to each club member regarding this issue. This is a reminder. There has been a couple of incidents where model airplanes were flown too close to the farm equipment and workers. The farm owner was approached by two of our club directors and reassured him that we will take care of this for not to happen again. When you fly in the presence of farm activities, choose an airspace away from them. If you see a fellow club member not following this rule, bring this to their attention. We need to self-regulate and police ourselves to avoid conflicts with our neighbors as it is the right thing to do and reduces our chances of conflicts that can cost us the field.

RDRC gets improvements done to their field in preparation for Fly For Tots (FFT): In preparation for their yearly charity activity our fellow club Raleigh Durham RC Club has been busy getting their facilities ready. They worked on repairs to their runway, patching cracks and applying a layer of asphalt sealer to the entire runway. They have running water available now. The pilot and spectator shelter got a load of gravel so less mud this year if it rains. They added and repaired spectator benches so there is more sitting area available. They had a show and display of models at the North Hills Mall on August 20 to promote their club and promote the Fly For Tots event this year. I did not have a chance to attend their show but plan on attending the FFT event. I encourage all RAMS members to attend the FFT as it is a good cause and a chance to watch some good flying. They also do night flying so get your night flyer ready and plan on getting together.

Academy of Model Aeronautics News -- AMA Attends the 2011 AUVSI North America Conference

From Rich Hanson, AMA Government and Regulatory Affairs

Information received at the recent AUVSI conference indicates the Notice of Proposed Rulemaking (NPRM) for FAA's proposed regulation for small Unmanned Aircraft Systems (sUAS) is on track for release in mid December 2011. It's anticipated the new rule will address model aircraft operations and will provide a provision for community based organizations such as the AMA to submit their own set of standards. If adopted, these standards will provide the modeling community an alternative means of complying with the sUAS rule. At this point AMA is hard at work in developing a set of standards aimed at allowing the aeromodeling enthusiasts to continue enjoying the hobby in much the same way as they do today.

AMA is also preparing for the release of the NPRM. Once released there will be a 90-120 day public comment period allowing AMA members and other stakeholders the opportunity to comment on the proposed rule. AMA is working toward providing its members a simple and effective means for responding to the NPRM. It will also provide analysis and commentary on the impact of the proposed rule and suggestions for improving the rule before the Final sUAS Rule is published in late 2012.

It is more important than ever that the AMA membership become well-informed and vigilant in keeping abreast of the sUAS issue as the rulemaking process unfolds. Timely updates can be found on this AMA webpage, on Facebook by Liking '[AMAGov](#)', and on Twitter at, <http://twitter.com/AMAGov>.

What is new at the field:



This is the Parkzone RAF S.E. 5a WW1 Biplane. It is a foamie with an E-Flite 480 electric motor running on 3 cells. Come with an 8 inch propeller with looks appropriate to the era. It is a light flyer and can be slowed down some but be careful with wing stall as it happens quickly. Is not the easiest to land since needs to be flown to the runway and does not glide well. It does nose over easily if you don't apply a little bit of throttle after landing with some up elevator to keep the tail down. It comes as a Bind & Fly for DSM2 / DSMX or a Plug & Play version. A 3 cell battery rated at 25C runs well but the performance dramatically improves with a 35C LiPo battery.



This Parkzone is flown with a JR 12 X.

Even though is easy to fly, it is more demanding than the Parkzone T-28. I would say it is quite fine for an Intermediate Pilot that has flown a low wing sport trainer.



J.T, Gary and Larry with Greg in the back. Gary is holding a Hangar 9 Frenzy. It is flown with a SAITO 125 4 stroke Nitro fuel (30% nitro heli fuel makes this motor hum beautifully). It is a great Sport Flyer and 3-D performer. This Frenzy is 4 years old. They have been discontinued. This one was put away for over two years and is now in service again.



Geoff is holding what was his trusted 3-D flyer. His smile is only for posing for the picture. He also may be smiling as sometimes I do when I crash as any crash is an opportunity to think about the next airplane.

Just remember the saying:

When you are flying inverted in a low pass, down is up **and up is expensive!!**



This is the **GAUI 300X-S** quadcopter. It is made by GAUI which is known for their helicopters. It uses a Gyro unit for each the aileron, elevator and rudder functions. It is somewhat easier to fly than a helicopter but once you are in the air, it is easy to become disoriented. This platform is nice for those that want to upgrade for aerial photography. Can be fitted with GPS module which adds hands off stability and return to home function. Can be fitted also with wireless camera for video and First Person View. This unit has a mount underneath for a video / still camera that can be moved by radio control. We have seen at the field Rich's A.R. Parrot quadcopter that flies controlled by his IPad. The Parrot is a complete package

that is ready to fly. The kits like this Gaudi are more customizable though but of course they require assembly and they are not cheap.



The motors are 450 size (X4). It runs on a 3 cell LiPo with at least 2200 mah. Propellers are 8 inches and two rotate clockwise and two counterclockwise to cancel tork. The speed controllers are 10 amps each (X4). In the upper portion of the picture is the three axis gyro and in the bottom is the Spektrum receiver. In the bottom of the unit you can see the camera carrier with one of the servos that moves this cradle.

DOs and DON'Ts of LiPo Battery Charging and Use: No doubt that more RC Pilots are getting into the electric power systems for their airplanes and helicopters. Electric power systems are more reliable than ever and offer power, performance and convenience like never before. Some prefer it over nitro and gas fueled power systems. The evolution of lithium based batteries has facilitated packing more power in a smaller and lighter package. So, how can we extend the life of our LiPo batteries and use them safely. Make sure that you are using the right settings in your charger. Charging a LiPo, LiFe or Li-Ion is not the same. Their chemistries have particular requirements. Keeping this in mind then:

1. **DO Charge any LiPo, LiFe or Li-Ion at 1-C.** So if a battery is rated to be a 2000 mah pack, charge it at 2000 mah setting or 2 amps. A 1-C charge takes a little bit longer but this charging rate is the easiest for your pack as it generates the least heat. Allows for the longest life span for your pack and allow the balancing port do its job. This is a good practice even with packs that are rated as capable to be charged at 2-4 C rates. You may charge faster at the field but do it the least possible.

2. **DO Charge your battery in an enclosure that can guard surroundings from catching fire** in case of a charging malfunction. LiPo sacks are common and easy ways to manage a pack being charged.
3. **DON'T let your battery get below the minimum voltage.** This is more of a flying issue than a charging issue. Flying until the speed controller starts shutting off is almost sure to be harmful to your battery especially if you do it routinely. Set your radio timer to alert you before the battery reaches a cut off voltage. Then fly by time and land before your battery drains too much. A LiPo battery cell that discharges to 2.5 volts or less can be ruined and ruin your entire package.
4. **DON'T ever leave the room when your battery is being recharged.** This is common sense. Monitor a battery that even though has become very safe to charge under current technology, it just takes one time and one mistake or malfunction for a pack to potentially catch fire.
5. **DO charge your battery with a storage charge** when storing it for extended period of time. An extended period of time varies depending on whom you ask. For some it is 1 week. For me is 1 month. But why a storage charge? This will keep a battery pack balanced and stable. When a battery is shipped to you it comes with a storage charge. A storage charge keeps the individual cells from drifting and going out of balance. A full charge has a better chance for the cells to drift further from each other than a storage charge does. The ideal way is to give a pack a storage charge and the fully charge the night before use. For a Lipo pack a storage charge per cell is 3.85 volts. For a pack that has been stored for a long time, bring it to full charge preferably at ½ C to allow the individual cells to catch with each other.
6. **DON'T ever charge without a balancing plug.** There is no reason now a days to charge without one. It keeps all cells even and reduces the chance no one cell becomes overcharged. A well balanced pack will always outlast an unbalanced pack. The more you keep charging an unbalanced pack, the more the individual cells will drift away reducing their life and pack performance. Some newer smart charges will not charge if the discharge cables and the balance tap are not “both” connected.
7. **DO invest on a smoke detector in your charging area.** Almost always a battery pack that becomes potentially overcharged will first vent producing a lot of smoke allowing you some time to be alerted before it actually catches on fire.
8. **DO keep batteries in a cool place for storage.** Nothing shortens the life of a battery pack like heat. Do not store your battery in a hot car or trailer. The same can be said if you leave a pack where it can freeze. A cool dry place is the best.
9. **DO not allow a battery pack to be punctured.** Charge, transport and place your batteries in a safe compartment that protects them from being punctured. When moisture and oxygen comes in contact with the chemicals of LiPo packs, it can puff and oxidize and potentially catch on fire.
10. **DO not use packs of different discharge rates** in series or parallel as you risk one pack to discharge sooner than the other reducing its life.

Choosing the Correct Wire Gauge: Does it make a difference on the size of the wire I use to transfer the power from my battery to the motor? Yes, size does matter!!!

Wire size does matter for the efficient transfer of power. On the American Wire Gauge (AWG) the larger the number the smaller the diameter of the wire.

Small micro indoor flyers would only have a current draw of less than 1 amp. A wire gauge of 22 is enough. If the indoor power system draws about 1-2 amps it would be better to use a 22 or 18 gauge wire.

Small park flyers drawing 2-3 amps would need at least an 18 gauge wire. If your park flyer is slightly larger and pulling 4-9 amps you could use an 18 AWG but a 16 would be better.

Larger planes drawing 10-19 amps would do fine with a 16 AWG.

Bigger airplanes in the sports flying and aerobatics class will draw about 20-30 amps. A 14 AWG is needed.

Quarter scale and larger airplanes will require a 12-10 AWG size wire.

Another factor influencing the size of your wire is the length of the run between your battery and the motor. If the run is long then go to the next size bigger on your wire.

To keep it simple, look at the size of the wire coming out of your battery. Then maintain that size of wire throughout your other power wires.

Get yourself a device that will measure the amps draw between the motor and battery and this will let you know more specific the information you need to decide your wire diameter among other things. I hope this helps those of you getting more into electric power and going bigger on your airplanes. This approach works for me. If you need help at the field, don't hesitate to ask Steve, J.T., me or the other members flying electrics regarding these considerations.

Isn't this interesting: I was reading some of the magazines I have received in the past couple of weeks. As you know, they have reviews on new products and many of them have a section for new stuff advertisement. It caught my attention that the Imax B6 DUO charger from Hobby Lobby is priced at \$139.00. The same exact charger with only the front labeling being different can be found branded for Hitec, Venom and a couple of other brands. The same exact charger price ranges from \$139.00 to \$279.00 being Venom the most expensive. Amazing!!! An the funny thing is that they are featured in the same few pages like if people are not going to notice. Lesson is, shop around before you buy. You might be paying too much for the same thing.

Keep your eyes open: We have had some damage done to the field. Full size cars running around our grass field ruining the little bit of good grass we have. The PortaPotty was flipped over. Full size car driven on the runway which is not designed to hold the weight of a vehicle like this. The farmer caught some young people in their car and warned them not to continue these activities. The Franklinton Sheriff's office was also notified. If you see anyone causing damage to our field, notify the Sheriff's office at 554-9132.

We heard at the field about a new hobby shop in the Triangle Town Center. One of our club members went there and took a look. This is what he had to say:

I stopped by the "New Hobby Shop" in the Triangle Town Center mall next to Barnes & Noble. It is the same guy that was selling toy helicopters in the kiosk he had on the main floor. The shop is devoted to dirt racing cars. He has a few helicopter parts he says, nothing for airplanes not the type of glue we use. He does have one used gas sport airplane , no motor, hanging from the ceiling he doesn't know anything about. He says he is going to start stocking electric airplanes (probably Air Hogs). As his store is about the size of our shade pavilion I don't know where he would put them. I can't imagine he could last past Christmas with the rent he must have to pay to be next to a draw like Barnes and Noble. Don't waste your time with this one

John Geier

Like always, I advise you to check it out for yourself and see if it meets your needs. We are definitely looking forward to have good hobby shops available close to us. Do your best in supporting our local hobby shops

Dates to remember:

September 4. RAMS Labor Day FunFly and club meeting. Night Flying later.

September 11. RAMS members are guests of the TriCounty RC Club FunFly. An e-mail from me will follow soon asking for a head count and giving directions on how to get to their facility.

Sept 16-17-18 - RDRC Fly for Tots. A group from RAMS is planning to attend.

E-Week at the Joe Nall – Sept 29 to Oct 1 <http://www.joenall.com/eweek/eweek.htm> This will be the first electric only Joe Nall activity. I don't doubt that in a couple of years it will be as big as the regular Joe Nall held yearly in May. I can't attend this year but I will try to make it for the next.

Joe Nall for 2012: May 12 – 19, 2012

Well, I am done. Take care guys.

I will see you at the field and have safe fun flying!!!

Dr. Joey

RAMS Secretary