

December, 2005

AMA #197 / IMAA#687

# Glitch Busters

Delaware R/C Club, [WWW.DelawareRC.org](http://WWW.DelawareRC.org)



## Next Club Meeting: December 6, 2005

- Location: Wm Penn HS Cafeteria 2
- Raffle: TBA
- Program Topic: TBA
- Next Club Event: Freeze Fly: New Years Day

## Dave Moyer Elected Pres.

November's Meeting was Election Night for the Delaware RC Club. Dave Moyer had been nominated for President and Stan Michalski for Vice President. Despite the best efforts of the executive board, no one new volunteered for the remaining offices of Treasurer and Secretary. In a club consisting of over 180 members, it would seem likely that we could find someone to fill these positions. But it didn't happen! The club is grateful to Brian Pasternak, who volunteered to be the secretary, and to the long-suffering Dick Stewart, who agreed to continue as Treasurer for another term.

This election leaves the club with the same board members as this past year. Please think about participating in the operation of the club; Don't leave it to the same old crew. They can get very weary from continued service. We'll be looking for new blood all though the next year: Can we count on you?

## Safety Corner

The new wave radios are here! Horizon Hobbies is selling a 2.4 GHz spread spectrum system for use in park flyers. There is no assignable frequency for these radios, since they operate in the 2.4GHz band and negotiate interference-free communication between the transmitting and receiving modules. I sent a note to Steve Kaluf at the AMA to clarify their position on frequency control. Here is his response:

*Steve, I realize that the new Spektrum radios will not cause interference with "Conventional" radios, but I wonder if the AMA has any suggestions on identifying them as such at flying fields with frequency control systems. We require AMA cards in slots and respective frequency pins on transmitters before turning them on. I am imagining the turmoil that will occur when someone comes out with a 2.4GHz radio, and tries to explain to the others that he doesn't need a pin.*

*Do you have any guidelines proposed for this situation?*

John, I've given that a bit of thought. Right now, if your club wants to continue to require some sort of pin on all transmitters the only solution would be to make up a handful of 2.4 GHz pins that could be placed on these radios. No corresponding position on the frequency board is needed, no pin is need either for that matter. Transmitters on 2.4 GHz are easily identified by their very short antennas.

## Inside this issue:

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## Delaware RC Club Welcomes New Members:

Brian Newton  
Mark Frankel  
Todd Fisher

## Meeting Minutes

Delaware R/C Club – Minutes of the General Membership Meeting – October, 2005

Club President Brian Pasternak called the November General Membership meeting to order at 7:30PM.

Show & Tell: There was no Show & Tell

Safety Report

The Club has received reports of safety concerns regarding inexperienced pilots flying at the Park without supervision. At this time, all that is required to fly at the Park is a valid AMA card. However, it is the duty of every Club member to assist new pilots until that pilot has proven his/her flying abilities. The Club will expand the Flight Instruction program to better serve newcomers to the hobby.

Stan Michalski noted a problem when using Dean's Ultra Plus battery terminals. The connector tabs break and may cause a short circuit. Be sure to inspect your battery terminals.

Old Business.

Dues for 2006 are now due. Members who renew before the Jan 15, 2006 deadline will be included in a "Early Renewal" raffle. Starting with the 2006 dues renewal the Club will no longer acquire Park stickers for members. All members will be required to obtain Park stickers at the Park office.

The Annual Club Auction is to be held on Saturday, November 5, 2005. CD: Stan Michalski. Doors open approx: 9AM – 9:30AM. Setup is at 8:00AM.

The Club still needs a volunteer to organize the Annual Club Trip to the WRAM show in February! Please volunteer!

Club Nominations of Officers was opened at the October General Membership meeting.

Last call for additional nominations was requested.

With no additional nominations from the membership Club Treasurer Dick Stewart agreed to run for an addition year. Brian Pasternak will take on the duties of the Secretary.

So, with the slate closed, the election resulted in the Same Old Board.

Offices :

President – Dave Moyer

Vice-President – Stan Michalski

Secretary – Brian Pasternak

Treasurer – Dick Stewart

New Business :John Stare will be stepping down as AMA Assistant Vice-President for District III. John Kirchstein will be taking his place.

Treasurer's Report – Dick Stewart gave the Treasury report.

50/50 – Because the Club has done well over the last couple of years, it was decided to have two 50/50 drawings this month. The winners were Frank McFoy and Ham Taylor.

Brian Pasternak, Secretary

### **Club auction wrap Up**

I want to thank all who helped out with the annual club auction held earlier this month at Shue Middle school. I was very nervous about running such an event as our auction, but on the morning of the event when I saw all of your smiling faces waiting at the door to help I felt a lot better. I want to take this opportunity to personally and on behalf of the club thank all of you. So Thanks!! We made a little over 300.00 this year. There is discussion going on to improve the auction next year. If anyone has any suggestions please let me know. Also I want to give a special thanks to Dick Stewart he helped me every step of the way and was indispensable.

Stan Michalski

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## Electric Power systems setup Part 2

Continued from October newsletter

By Stan Michalski

In last month's article I discussed how to start the design of an electric power system for planes designed for electric power as well as glow to electric conversions. It may be that you have an existing electric plane that does not meet your expectations and needs increased performance, or you may have a glow model that you want to convert. The method I am outlining here will work for both. I questioned a lot of club members about how technical they want this series to be. Some liked it the way it was, while some wanted more detail, and some wanted less detail. I will attempt to simplify things as much as I can but still provide accurate useful information. I can understand how all of this information can be overwhelming so here it goes.

Last month I outlined the start of a system on how to determine what type of performance you wanted in your plane, and how to use your computer, ruler, and scale to get you there. As you will recall I use a program called Electricalc. It is available from Hobby Lobby and several other sources for around 39.95. You will also recall that first you have to enter your airplane parameters such as wing area, weight, and coefficient of drag into Electricalc. Next you entered or picked from a drop list provided in Electricalc your Motor, battery, gearbox, and prop numbers. After entering all this good stuff you hit the enter key and like magic Electricalc spits out a whole bunch of numbers. The primary things I look at in all of these numbers are **watts per pound** and **thrust in ozs**. This is my starting point. Based on my experience, a lot of reading, and flying I have found the following. 70 to 80 watts per pound is a trainer. 90 to 100 pounds is a reasonable aerobatic ship. 120 watts per pound will be a missile. As for thrust 70 to 90 % of the weight of your plane should be the target thrust in Ozs you are looking for. OK that's it for recap.

We left off last month at the "give and take" involved to get the current draw, rpm and power limits within limits when our proposed design does not cooperate. The full throttle current draw should be within the limits of your battery, motor and controller. If this current draw is too high I first tinker with the prop diameter and pitch. If after doing these changes Electricalc tells me that the current draw is now within limits but performance of my design is now degraded due to the watts/pound power or thrust being too low we have to modify our approach. At this point I fall back to increasing the gear ratio of the gearbox and increasing the prop diameter or pitch, or both. This has worked well for me in many cases, but one word of caution. As your prop gets bigger the ground clearance between your prop tip and mother earth gets lower and lower. Make sure your prop will not mow the grass on take-off. You can also use an out runner type motor to solve an overly high current draw problem but I have found the gearbox approach to work better and give higher efficiency in most cases. Next let's say we get our current draw at full throttle low enough, and our thrust and watts per pound are right on the money. Then we discover that the top speed of our masterpiece is only 45 MPH. In this case I usually increase the prop pitch a little at a time while decreasing its diameter. I work this angle until I strike a good compromise between thrust, watts/pound, full throttle current draw, and decent top speed. This is just basic propeller theory that really does not specifically apply to electrics. I try to get the highest speed I can with this method and it has worked well for me. It has also been validated by flights I have made to demonstrate to me it really works. After all isn't this why high performance aircraft have variable pitch props??.

I am going to end this month with two last suggestions. I measure to make sure the proposed motor, batteries, and controller fit prior to making any purchases. Also while you are on the manufacturer's website or on the phone with them it does not hurt to find out what all of your proposed stuff will weigh. I then take modeling clay and place it in the airplane at the actual locations where all of my proposed components should go to see how the conversion airplane will fare in terms of weight and balance. After all you are in some cases modifying a plane that was not meant for electric power and you may have to do a lot of shifting of weight to make things work out. So do your home work before you spend your money. Next month I will finish up this adventure.

Till then make sure you mail your list to Santa!!!

Thanks for reading!

Stan



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**Glitch Busters** is a monthly  
publication of the  
**Delaware RC Club**

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## Set Your Course for Upcoming Club Events

Sunday, January 1, 2006

Freeze Fly

**WRAM SHOW '06— FEBRUARY 25, 2006**  
**From University Plaza (in front of the Har-**  
**bor Freight store) at 7:00 AM**

**Dues may be paid for 2006 anytime before Jan 15th to get early renewal benefits**

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A series of blue snowflakes of various sizes scattered above the text.  
**Seasons Greetings**

