



# Smoke Signals

Monthly Newsletter of the Meroke RC Club

December 2009

AMA Gold Leader Club #458 - established 1963

## Election Highlights

Last month, the Meroke members voted in a new slate of officers for 2010, headed by Ted Evangelatos, our new President. Jaclyn Tavolario was elected Vice-President, Dave Bell our Recording Secretary while Herb Henery and Curtis Underdue will once again hold the positions of Treasurer and Corresponding Secretary. The Board of Directors will consist of Tony Pollio, Nelson Ramos, Russell Rhine and Ed Weimann.

## From Our Elected President for 2010

### Ted Evangelatos

To our members:

First off, I wish to extend a very big "thank you" to Tony Pollio for guiding the club through a very tough year. Tony, congratulations on a job well done. I am counting on your continuous support for this coming year.

As the new President-elect of the Meroke RC Club, my main aim for 2010 will be bi-fold: I will strive to make the club a more fun place to be for its members, and the Cedar Creek Aerodrome a better field to fly in.

Here are a few issues which I plan to address this coming year.

#### Meroke RC Club

- Increase membership through membership drives, while retaining current members
- Make the club meetings a fun experience, so that members look forward to them
- Invite more member participation in the club's affairs

- Open up the Board meetings to the membership

- Shift more decision making from the Board to the membership. After all, it is OUR Club, not just mine or the Board's

- Reorganize the club's flying events so that more members are enticed to participate

- Expand the building club's activities to include more tutoring on ARF assembly, finish and maintenance

#### Cedar Creek Aerodrome

- I will work closely with the Chief controller and his assistants to make Cedar Creek a better place to fly, while maintaining the field's safety rules

- Coordinate efforts with other clubs and local associations towards the common goal of keeping our field intact so that we all enjoy our flying there worry-free.

#### Other local clubs

- I will approach other RC clubs on Long Island and work closely with them on common issues, such as coordinating efforts to preserve and improve our flying fields.

- I will work on organizing more joint fly-ins and RC events, inter-club fun fly meets, both at Cedar Creek and in other flying fields in our area.

In closing I would like to stress one very important point: The success of my initiatives and ideas will depend not only on my work or the Board's, but also on the participation of the whole membership. Let us remember: It is OUR club - we all have to work together for its betterment.

## Club Officers & Volunteers

<b>President</b>	Tony Pollio 516-794-9637	rctony@optonline.net
<b>Vice President</b>	Lou Pinto 516-785-6890	meroke36@aol.com
<b>Treasurer</b>	Herb Henery 631-665-6274	hahenery@aol.com
<b>Recording Secretary</b>	Ron Berg 516-781-3911	rberg20@ymail.com
<b>Corresponding Secretary</b>	Curtis Underdue 917-213-4459	curtisu@msn.com
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	Ed Wiemann 516-735-0733	eww46@man.com
	Nelson Ramos 631-420-2889	nel98rc@optonline.net
	Ted Evangelatos 516-997-0451	tevelatos@yahoo.com
<b>Chief Field Controller</b>	Bob Reynolds 516-775-4377	mrbrew@optonline.net
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<b>Membership Committee Programs Education</b>	Frank Lasala Jaclyn Tavorario Jaclyn Tavorario Charlie Lando	Lou Pinto Harvey Schwartz Phil Friedensohn-Advisor
<b>Friends of Cedar Creek</b>	George Carley	Ed Wiemann
<b>Building Program Archivists</b>	Charlie Lando Ron Berg	Ernie Schack Stan Blum
<b>Webmaster Social (Coffee) Raffles</b>	Ted Evangelatos Irv Kreutel Curtis Underdue Ed Wiemann	Al Hammer
<b>Show and Tell Video Librarian</b>	Bob Cook	
<b>Audio/Visual</b>	Tom Cott	
<b>Come Fly With Me</b>	Charlie Lando	Dave Bell
<b>Open Fly-In TAG Program</b>	Ernie Schack Charlie Lando	Dave Bell
<b>Monthly Fun Fly One Fly Dinner Picnic</b>	Chris Mantzaris Ted Evangelatos Jaclyn Tavorario Chris Mantzaris	Gene Kolakowski Jaclyn Tavorario
<b>Contest Directors</b>	Allen Berg Ernie Schack	Nick Giuffre Tony Pollio Tom Scotto
<b>Flight Instructors</b>	Allen Berg Douglas Frie Mark Klein Ken Mandel Tony Pollio Bob Reynolds	Ted Evangelatos Dan Gramenga Gene Kolakowski Tim Murphy Mike Hagens* Harvey Schwartz
<b>*Flight Instruction Coordinator</b>	Bill Streb Mike Hagens	Al Weiner 516-546-6773

## From the President

"As my term as President of the Meroke R/C Club for 2009 comes to an end, I want to take this opportunity to thank each and every member of our club for their contribution toward making this a truly successful year for our club.

Our many accomplishments and successfully run programs and activities were listed in previous newsletters and will not be listed here.

I am truly thankful and grateful to have had so many members volunteer to ensure that our many activities and programs were successful in 2009.

Because of your efforts, it was a pleasure serving as your president this past year and I urge all members to support the incoming administration so 2010 will be even more successful for our club.

Happy Holidays

*Tony Pollio*

## Meroke's Awards/Holiday Dinner

Just a reminder: **Antonettes** on Thursday, December 10<sup>th</sup> at 6:00PM. Antonettes is located at 2701 Merrick Road in Bellmore.

## Meroke Calendar

December 3 <sup>rd</sup>	Club Meeting 8 PM - Show & Tell
December 10 <sup>th</sup>	Meroke Holiday Party
December 17 <sup>th</sup>	Club Meeting 8 PM - TBA
January 7 <sup>th</sup>	Club Meeting 8 PM - Show & Tell
January 21 <sup>st</sup>	Club Meeting 8 PM - TBA
February 4 <sup>th</sup>	Club Meeting 8 PM - Show & Tell
February 18 <sup>th</sup>	Club Meeting 8 PM - TBA

Meetings are held the first and third Thursday of each month at 8:00 PM at the First Presbyterian Church of Levittown located at 474 Wantagh Avenue. The church is about 1 mile north of Exit 28N on the Southern State Parkway. Additional information can be found on the club website - [www.meroke.com](http://www.meroke.com).

**2010 Dues are Past Due**

## Choosing the Right Brushless Motor

Finding the brushless motor that is the best choice for your plane or helicopter can seem to be a daunting task due to the large number that are available. There are a few important considerations you should keep in mind when choosing. This article will help you identify these issues so you can spend more time flying and less time trying to find that "perfect" motor.

Ultimately, you want to swing a certain size prop at a certain RPM. In fact, the freedom you have in choosing propeller size and operating RPM can lead to huge performance gains over comparable glow motors used in many remote control airplanes. Prop and RPM selection determines how much power you need, it is important to choose a motor that is almost at its limits when running at that power level. A motor that is too small will overheat and ruin itself, a motor that is too large will be a detriment to performance, due to the added weight.

Translating propeller size and RPM into power requires some help. This help can come from a computer-based prop simulator, such as the Slough RC Model Club Prop Power, Thrust and Efficiency Calculations web site by Rod Badcock. You can also find data posted by someone who has done what you are trying to do; find out what prop they used, what RPM it spun, and how much power was used.

Your list of potential motors should now only contain motors that can comfortably (but not 'in their sleep') put out the power you need. Now you'll have to make decisions on the other things: battery voltage and capacity, direct drive or geared, outrunner or inrunner, and KV.

The easiest choice is whether to use direct drive or a gear box, so make that one first. If you want to turn high RPM (greater than 10,000 RPM) you'll probably want a direct drive inrunner. For lower RPM, you can run an outrunner in direct drive or an inrunner through a gearbox. The outrunner is simpler and quieter, but the inrunner in a gearbox can be more adjustable and slightly more efficient. In some cases, the outrunner can be quite a bit cheaper. Each has its advantages, so consider them both.

At this point you know what RPM your motor needs to turn. It is either the same as you want the prop to turn (direct drive), or at a ratio faster than the prop when using a gearbox. Motor RPM is going to determine

your specific motor and battery choice, by the following approximate formula (assuming lithium polymer batteries).

$$\text{Motor RPM} = 0.8 \times 3.5V \times \text{Series Cell Count} \times \text{Motor KV Rating}$$

You need to select the right motor and battery combination that will satisfy the motor RPM formula. You can do it with a low KV motor and a high series cell count battery, or vice versa.

Lithium polymer battery packs, such as the ones made by Thunder Power, are ideal for use with brushless motors in radio controlled airplanes and helicopters due to their low weight and high capacity compared to NiMH and NiCd packs. Along with a brushless motor and battery, you will also need a brushless speed control (ESC) with an amp rating equal to or greater than the peak current drawn by your motor.

Make your choice, order the parts, put them together, and test it with an Eagle Tree watt meter. You want to make sure that you are near the RPM and power levels you were aiming for. Remember, though, the most important test is how it performs in the air. Fly it, and fine tune with prop selection. Hopefully this article has brought you close enough that a motor or battery change isn't required.

## Choosing the Right Electronic Speed Controller

Choosing the right Electronic Speed Controller (ESC) for your radio control electric aircraft can be made quite simple. ESCs are available with many different features, limits, and price ranges. Sorting through the list of ESCs can be done by identifying what you need, and eliminating the rest.

The general procedure is to narrow the list down to ESCs that will get the job done, and then make your final selection based on price and preference. First, select ESCs based on their most fundamental features.

### Brushed or Brushless?

R/C speed controllers are separated by the type of motor they work with, either brushed or brushless. If your motor has two wires, it is brushed, and you need a

brushed speed control. If it has three wires, it is brushless motor, and you require a brushless speed control. An exception to these rules are ESCs that can work with both types of motor, however this feature is not commonly available. Castle Creations and Hacker Brushless are two manufacturers of brushless motors and ESCs.

### **Current Rating**

An ESC will have a power limit. To handle more power, the ESC needs to be larger, heavier, and is more expensive. It's important to know the peak current your motor is going to pull at full throttle. This determines the current rating you should look for in an ESC. Always choose an ESC with a current rating that is higher than what you need. If the motor is going to pull 12A, a 25A-rated ESC is a much better choice than a 10A-rated one. The 10A ESC will probably overheat and cook, even if you only fly at half throttle. ESCs are relatively light and maintain great resale value, so this is one item in your power system where skimping isn't worth while.

Choosing the correct type and identifying the minimum current rating are the two big steps. The next choices depend on your preferences. Here are some of the features and limits that can affect your selection.

### **Voltage Rating**

All ESCs have voltage limits. Some even have more than one! What is your battery voltage? Choose an ESC that is designed to work with an equal or higher voltage. Some ESCs are designed for low voltages (below 13V), some for medium voltages (below 25V), and some for high voltages (above 25V). You shouldn't connect a high voltage battery to a low voltage ESC, but it is also wasteful to use a high voltage ESC with a low voltage battery. The second voltage rating that some ESCs have is based on their Battery Eliminator Circuit (BEC). For an ESC to provide power to your receiver and servos, it has to drop battery voltage down to 5V. This becomes difficult once battery voltage is above 13V, so usually a separate receiver battery or voltage regulator is required. Consider what is going to be powering your receiver and servos.

### **Low Voltage Cutoff (LVC)**

To protect your lithium polymer battery pack from being discharged too much, most ESCs can shut down when they sense battery voltage has become too low. This is

almost always a useful feature, as it can save your li poly battery from being permanently damaged.

### **Price**

ESCs with the same current and voltage rating can vary in price. Investigate this large market, and put prices on the features that you want.

### **Programmability**

Some ESCs simply work out of the bag, like a servo. Others can be fine-tuned and set up with exotic throttle profiles. The most advanced can be configured via a computer program and cable.

## **How do you Like this View?**



## Changing the Composition of Fuel

Occasionally, you may want to change the component percentage of an existing fuel, such as increasing its castor oil content. This would be advantageous for the break-in and normal operation of certain engine types (e.g., ringless iron/steel pistons/cylinders; plain-bearing crankshaft support). What are the requirements? You must know the existing oil percentage, and the quantity of the fuel to be changed.

### Example

If 1 gallon (128 ounces) of the existing fuel blend contains 18% castor oil and you want to increase it to 22%, the oil content needs to be increased by 4%. Here's a formula that tells you exactly how much castor oil to add:

$$\text{Ounces To Add} = ((F-I) \times A) / (100-F)$$

- F is the final percentage of oil desired
- I is the initial percentage of oil already in the fuel
- A is the number of ounces you are treating.

### Example:

If you have 1 gallon (128 oz.) of 18% synthetic oil fuel, and you want to add castor oil to bring it up to 22%, then find the following:

$$F = 22; I = 18; \text{ and } F - I = 4$$

In the numerator portion of the formula, because there are 128 oz. in a U.S. gallon, multiply  $4 \times 128 = 512$   
In the denominator portion of the formula,  $100 - 22 = 78$

$$\text{Finally, } 512/78 = 6.6 \text{ oz. (195.2 ml)}$$

There might not be enough room in a gallon can to accept the 6.6 ounces of additional castor oil. You may have to mix everything between two 1-gallon jugs. You can also use this formula for increasing a fuel's nitromethane or methanol content. Of course, when you increase the percentage of these chemicals, the total volume of the fuel may change significantly; so recalculate the lubricant percentage based on the new total volume and modify as necessary.

## ADDITIONAL INFORMATION

Many technically minded modelers may want to consult the book, "Power: Beyond the Basics (available at the rcstore.com) for additional information and techniques concerning glow fuel; some of the topics addressed include:

- Determining an existing fuel's lubrication content
- Mixing your own fuel (getting the chemicals, obtaining the hardware, calculating the volumes, transferring the fuel blend, fuel use tips)

## Monthly Fun Fly

November's Fun Fly was successfully held at the field and it concluded a very successful season of competition. The standings were tight at the top and Bob Reynolds had to continue with his skilled flying to hold off Tom Tavorario and Ted Evangelatos. Bob tied for second place for the day but managed to hold onto the lead he possessed for most of the season. Jaclyn ran another great day of competition assisted by the judging/scoring team of Dave Bell and Russ Rhine. .

Place	Flier	Points
1	Bob Reynolds	84
2	Tom Tavorario	92
3	Ted Evangelatos	104
4	Patrick Boll	138
5	Nelson Ramos	164
6	Gene Kolakowski	169
	Tony Pollio	169
8	Curtis Underdue	176
9	Allen Berg	179
10	Richard Boll	196
11	Ron Berg	207
12	Chris Mantzaris	209
13	Mark Klein	218
14	Peter Ackerman	221
15	Kevin Urso	223

## Tech Tip

### Neatness counts

When you find yourself seated at your building bench or work table, you should always gather all of your required tools and supplies before you start the assembly process. Look over the instruction manual and check off the items listed to build your plane. This will save assembly time and is a more efficient way to proceed. When it comes to gluing the tail surfaces into place on the fuselage, break the process into two steps.

First, dry-fit the parts by placing them their respective slots and take measurements to make sure they are level, centered and properly aligned. This is when you mark the covering with a fine tip marker and you cut away the covering to expose the wood for a good glue joint.

The second step is then to use masking tape to protect the control surfaces from excess glue, in this case 20- to 30-minute epoxy. You want to use slow-setting epoxy to give you time to get the alignment correct before the adhesive sets. Apply a light coat of epoxy to the mating wood surfaces and slide the control surfaces into place. Any glue that squeezes out of the joints will flow onto the tape and not the model's finish. You can wipe the excess away with some paper towels soaked with rubbing alcohol. Set your model aside and let the glue cure, remove the tape and you're finished!

## Flight Techniques

### 6 Steps to a Perfect Roll

1. Begin by flying straight and level, into the wind or downwind, and add a little up-elevator to move the plane's nose upward a few degrees.
2. Begin the roll by applying a little aileron, timing it so it lasts for 2 to 3 seconds.
3. When the wing has rolled past vertical (knife-edge), begin applying down-elevator.
4. Increase down-elevator until the plane is completely inverted.
5. As the wing continues to rotate past inverted, reduce elevator input until the stick is at neutral.
6. The plane should rotate back into the upright position and exit the maneuver at the same altitude at which it entered.

### December Birthdays

- 2 *Alvan Hammer*
- 2 *Ray Maramara*
- 11 *Robin Smith*
- 12 *Chris Mantzaris*
- 21 *Nelson Ramos*
- 22 *Bill Streb*
- 26 *Irving Kreutel*
- 30 *Tony Pollio*



## CHICKEN WINGS

