



Smoke Signals

Monthly Newsletter of the Meroke RC Club

July 2009

AMA Gold Leader Club #458 - established 1963

Open Fun Fly - June 7th

The weather was in our favor for long enough to have a great day for our annual fun fly. The limbo pole took one competitor out of the competition before the event even started. 18 fliers signed up for the day's events representing the Merokes, and also the HHAMS, Nassau Flyers, RCSMP, Whitman Flyers and the Mid-Hudson RC Society, as well as a few Independents.

Frankie Lang was ahead going into the 3rd event (NATS Special) with a commanding lead with first places in the first two events. A DQ on the 3rd

event left the door open for many other fliers. A first place in the fourth and final event for Frankie didn't seem to be enough as Mr Consistency - Ted Evangelatos (shown above) - came in First Place for the day. Ahead of Allen Berg (2nd Place) by 17 points and Gene Kolakowski (3rd Place) by 24 points, Ted led the Merokes to take the 6 top spots in the day's competition.



1	Ted Evangelatos	348
2	Allen Berg	331
3	Gene Kolakowski	324
4	Tom Tavorario	315
5	Frank Lang	305
6	Patrick Boll	269
7	Richard Rizza	163
8	Sal Vallone	128

9	Ron Berg	124
10	Nelson Ramos	102
11	Peter Ackerman	99
12	Richard Boll	79
13	Gunter Doell	69
14	Charlie Restivo	64
15	Thomas Mascialino	53
	Tom Abate	53
17	Steve Robinson	29
18	Jose Maldonado	0

It was nice to see Richard Rizza of the Mid-Hudson RC Society, who made the trip all the way down from upstate. It was a fun day and thanks go out to all who helped before and during the event.

Meroke Calendar

July 2 nd	Club Meeting 8 PM - Show & Tell
July 16 th	Club Meeting 8 PM - Program to be determined
July 18 th	Club Fun Flys - Note: this is a Saturday
July 19 th	Come Fly with Us
August 6 th	Club Meeting 8 PM - Show & Tell
August 20 th	Club Meeting 8 PM - Program to be determined
August 22 nd	Pattern Primer - more information in next month's newsletter
August 23 rd	Club Fun Flys
September 13 th	Annual Meroke Picnic at the Cedar Creek Aerodrome

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.

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Friends of Cedar Creek	George Carley	Ed Wiemann
Building Program Archivists	Charlie Lando Ron Berg	Ernie Schack Stan Blum
Webmaster Social (Coffee) Raffles	Ted Evangelatos Irv Kreutel Curtis Underdue Ed Wiemann	Al Hammer
Show and Tell Video Librarian Audio/Visual	Bob Cook Tom Cott	
Come Fly With Me Open Fly-In TAG Program	Charlie Lando Ernie Schack Charlie Lando	Dave Bell Dave Bell
Monthly Fun Fly One Fly Dinner	Chris Mantzaris Ted Evangelatos Jaclyn Tavorario	Gene Kolakowski Jaclyn Tavorario
Picnic Contest Directors	Chris Mantzaris Allen Berg Ernie Schack	Nick Giuffre Tony Pollio Tom Scott
Flight Instructors	Allen Berg Douglas Frie Mark Klein Ken Mandel Tony Pollio Bob Reynolds	Ted Evangelatos Dan Gramenga Gene Kolakowski Tim Murphy Mike Hagens* Bill Streb
*Flight Instruction Coordinator	Mike Hagens	Al Weiner 516-546-6773

From the President

It's hard to believe that half the year is gone, so this month I would like to quickly summarize the Meroke Club's activities completed over the past six months and activities planned for the next six months.

Since the beginning of 2009, we updated the membership list, updated our website, renewed our Club Charter, participated at the Nassau Flyer's flea market, held a virtual fun fly, worked with Hofstra students to produce a video about the Meroke Club, completed another winter of our builders program, held our club annual auction, participated in the annual Cradle of Aviation show, upgraded our Instructor and Intro Pilot programs, established an election nomination committee, established a membership committee, revised the method of voting in and keeping track of new members, continued with our monthly fun fly and one fly, applied for and received our third \$1000 grant to hold a TAG program, and held another successful Open Fun Fly.

Plans for the second half of the year include: hosting our third TAG program on July 19th and 22nd, holding our first Pattern Primer on August 22nd, our annual picnic on September 13th right at the Aerodrome, continuing with the monthly fun fly and one fly, discussing nominations for election of officers and Board members in September and October, elections in November and our holiday party in December.

Our club is very active and successful because of the hard work of the members who volunteer to coordinate and/or participate in these activities. Thank you and keep up the good work.



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Tech Tips

Fuel Filters - There has always been controversy about using a filter between the tank and the needle valve. Opponents claim that filtering the fuel as it is pumped into your tank eliminates the need for in-line filters. They point out that filters can leak air into the system, causing a lean needle-valve setting. They also stress that two additional fuel-line connections increase the possibility of disconnection during the stresses of flight. Proponents of in-line filters claim that fuel can never be filtered enough. They argue that, in the modern carburetor, which requires absolutely clean fuel, tiny passageways and orifices can easily become clogged. They also declare that contaminants may enter the tank via the vent tube in a suction-feed system, or from the exhaust in a muffler pressure unit. Claims and counter-claims aside, the decision is up to the modeler.

Consider this: if you use filters, maintenance is required; they have to be cleaned periodically. Purchase filters that can be unscrewed; the fine mesh screen can then be removed and cleaned. When reassembling the filter, it's important that the sealing gasket isn't damaged and leaking. Here's where the syringe comes in handy as a diagnostic tool: attach two short pieces of silicone tubing to the filter, then attach the syringe to one end and clamp off the other with hemostats. Submerging a defective filter in a jar of water while pressurizing the system will produce a stream of air bubbles indicating a leak that must be corrected.



Welcome Visitor

It certainly was nice to see Sal (Seddio) at the field to watch the Open Fun Fly.

O. S. Engines 95AX

The O.S. Engines 95AX is a new size in the popular AX series - famous for providing uncompromising power in tight-fitting applications. A high-performance engine that's ideal for aerobats and large-scale models, the .95 AX features generous thread on the extra-long, balanced crankshaft for more secure prop attachment. The E-4040 Power Box muffler that's included dampens noise while boosting power. It costs \$280 and will be available in late July.



Specifications

Displacement: 0.949ci

Bore: 1.091 in.

Stroke: 1.016 in.

Practical rpm range: 2,000-16,000

Power output: 2.9 hp @ 15,000rpm

Engine weight: 20 oz.

Includes: E-4040 Power Box silencer

Monthly Fun Fly

The 2009 Monthly Fun Fly Season continued last month with its 3rd meeting with 8 fliers competing.

Place	Flier	Points
1	Bob Reynolds	31
2	Ted Evangelatos	38
3	Tom Tavorario	43
4	Curtis Underdue	60
5	Nelson Ramos	69
6	Gene Kolakowski*	74
7	Allen Berg	78
8	Ron Berg	79
9	Tony Pollio*	81
9	Chris Mantzaris*	81
11	Richard Boll*	87
12	Mark Klein	90
13	Patrick Boll*	92
14	Kevin Urso*	95

* Did not compete

Dr Phil is Back

Dr. Phil,

How do I select an appropriate glow plug for my 2 or 4 stroke engine?

First let's have a very BASIC look at how glow plug ignition works. With a glow plug engine, ignition is initiated by the application of a 1.5-volt power source. When the battery is disconnected, the heat retained within the engine's combustion chamber remains sufficient to keep the engine running. Ignition timing is 'automatic': At higher rpm, the plug becomes hotter and, appropriately, fires the fuel/air charge earlier; at reduced rpm, the filament becomes cooler and ignition is retarded.

Now for the great mystery! What keeps the coils hot once the battery is removed from the glow plug? The methanol portion of the glow fuel reacts with the platinum coil of the glow plug causing it to glow. This is called a catalytic reaction because the pressure in the cylinder acts as a catalyst for this chemical reaction between the methane and platinum. The higher the pressure the greater this reaction will be, causing the glow plug to become hotter. For the engine to run properly the glow plug must produce enough heat to cause the mixture to reach its ignition point just as the piston is approaching top dead center (TDC). If the plug is too hot the fuel mixture will explode before the piston approaches TDC. If the plug is too cold the fuel mixture will explode after the piston passed TDC. To optimize the performance and power of your engine, the mixture must fire at exactly the correct time. Not too soon, and not too late!

To control the timing of our engine you must have the correct RC glow plug that corresponds to the methanol content in your fuel. If your fuel has a higher methanol concentration (less oil and nitro) you will want a glow plug that will react "less" to the methane during the catalytic reaction in order to have the coils of the plug to produce the necessary heat to reach ignition temperature at the correct time. Plugs that react "less" to the methane are called "cold" plugs. "Hot" plugs react more with the methane causing the plug to get hotter more quickly. In a

nut shell, higher nitro fuels require colder plugs. And vice versa.

Every glow plug manufacturer produces a range of plugs from "hot" to "cold". The way the companies name these different types of plugs makes no sense. On top of that, each manufacturer has a *different* way of naming their plugs. It's not that complicated if you don't try to make sense of why they call them what they do. Just know where each plug falls in the range between hot and cold. It is recommended to stick with the type of plug that comes with the engine. The important thing to know is that every RC glow plug is different and you need to have the right one for your engine.

If the engine speed decreases significantly when the glow driver is removed you could have a bad glow plug. If you are absolutely sure the glow plug is good, you may want to switch to a hotter plug or switch to a fuel with more nitro (less methanol). If the coils of the glow plug continuously fail or break over and over then you may consider changing to a colder plug. If the engine seems to backfire constantly, you may want to change to a cooler plug or switch to a fuel with less nitro (more methanol). Again, unless you have a legitimate reason, stick with the glow plug that comes with the engine.

Some glow plugs have a little bar that protrudes over the coil of the glow plug. The bar resembles the electrode ground of a spark plug. The purpose of this bar is to protect the coil from getting doused with unburned fuel which can be a problem when the engine is at idle. The bar itself is metal and retains heat which helps keep the engine idle smoothly. Modern nitro engines really do not require idle-bar plugs. With the finer adjustable carburetors and exhaust systems that retain combustion heat, newer type nitro engines most generally run fine with a standard glow plug.

Idle-bar plugs do come in handy for engines that are mounted inverted. When an engine is upside down there is an increased chance of having unburned fluid contact the glow plug. If your engine is mounted upside down and has

trouble idling smoothly you may want to consider an idle-bar glow plug. Just keep in mind that your maximum RPM will drop slightly when switching to an idle-bar glow plug. Also be sure that your engine is made to accept an idle-bar glow plug. You *don't* want the piston to hit the idle-bar!

When should you replace your plug? If your engine just will not fire, remove the plug. Carefully applied the glow driver and make sure the coil is glowing. Only apply the glow igniter for long enough to see the coils glow. Leaving the igniter on the RC glow plug too long will damage it. If the coils do not glow, you obviously need to replace the plug. If the engine speed decreases significantly when the glow driver is removed, you may have a bad glow plug. Another sign of a bad glow plug is if you just can't seem to get the low speed idle tuned correctly. If the engine is not transitioning from idle to full speed smoothly no matter how much you adjust the carburetor, you probably need to replace your glow plug. Remember, *Hot* plugs promote better idling and acceleration. If your engine runs rough or accelerates sluggishly, a hotter plug will help. Cold plugs produce more power and may improve performance if your engine runs hot. The downside is rougher idling and more difficulty in tuning. The life of a glow plug varies particularly in the case of very high performance engines, glow plugs have to be regarded as consumable items. However, plug life can be lengthened and performance maintained as follows:

Fit a plug suitable for the engine. Use fuel containing a moderate percentage of nitro methane unless essential for contest use. Do not run the engine lean, or leave the plug connected while adjusting the needle-valve. Use a fuel containing as low nitro as possible.

Here is a list of a few OS max glow plugs and their recommended uses for R/C airplanes:

Type No 6 (formally A3) - HOT - Running-in, Engines smaller than .32 capacity - Engine types: 25SF, 25FX, 10-40LA

Type No. 8 - MEDIUM - Engine types: Most O.S. engines

Type No 10 (formally A5) - COLD - For R/C Aircraft Larger than .60 capacity engines - Engine types: 61/91FX, 65LA, 140RX, 160FX, BX-1, and BGX-1

Type F - Engine types: All Four-stroke engines - Engine types: 140RX-FI-160FX-FI-49PI

Dr. Phil,

Are they real or synthetic? I mean the fuel!!

The RC airplane fuel that the majority of model airplanes run on is nitro methane fuel, also know as glow fuel. Both four stroke and two stroke engines use this type of fuel.

Nitro methane fuel contains methanol, oil, and usually nitro methane. Each has a specific function. In addition to the three key ingredients, every fuel manufacturer has their own additives that are proprietary to each manufacturer.

The bulk of RC airplane fuel consists of methanol, which is a type of alcohol. Methanol is needed for keeping the glow plug hot. Electrical power must be applied to a glow plug when starting an engine. When the glow igniter is removed the methanol from the fuel reacts with the platinum material in the glow plug's filament. This chemical reaction is what keeps the glow plug hot enough to keep the engine running once the glow igniter is removed. Methanol is also the primary combustible substance in glow fuel.

This is what provides lubrication for all of the moving parts. Without oil the engine will over heat and seize due to friction. RC airplane fuel contains castor oil, synthetic oil, or a mixture of both. Typical sport engines use fuel with an 15% to 20% oil content.

Castor oil is a naturally occurring lubricant derived from a castor bean. Castor oil is very good at lubricating the engine at all temperature ranges. When this oil breaks down it forms a lubricating film that does an awesome job at lubricating the engine. Castor oil provides better protection for your engine should you accidentally run it lean. The problem with castor oil is that all of this

lubricating film ultimately comes out the exhaust sliming your airplane.

Synthetic oil is a man made substance. Synthetic oil does a great job at low temperatures and it doesn't slime your airplane! The draw back is that synthetic oil is not as effective at higher temperatures and does not offer any protection for an accidental lean run of your engine. For this reason, many fuels contain a blend of both castor and synthetic oil. This way you minimize the messy discharge of the exhaust while keeping your engine well lubricated at all temperatures.

Nitro methane is used in drag racing to get a boost of power. Nitro methane requires less oxygen to burn compared with other fuels. This means that more fuel and less air is in the cylinder when it fires. This provides more power and also produces more heat. Typical RC airplane fuel contains around 5%-15% nitro. It is important not to exceed the recommended nitro percentage for your engine because you will literally burn it up. Some engines built specifically for racing can run with a larger percentage of nitro. But the typical engine seen at the flying field runs with a nitro content between 5%-15%. When breaking in a ringed engine you may want to consider using only 5% or less nitro to keep the heat minimized.

The methanol in RC airplane fuel naturally attracts water. For this reason it is very important that you keep your fuel container airtight. Make sure the lid is on tight. If you have fuel fittings in the cap of your fuel container then make sure you replace this cap with a solid airtight cap when storing your fuel. Fuel containers that are half empty are more vulnerable to getting contaminated with water, especially if you live where it is very humid. When your fuel container is half empty you may want to consider finding a smaller container to store it in if it is going to be a while before you fly again. You should not store your fuel in the direct sunlight. The ultraviolet rays could break down the fuel. But keeping your fuel dry is the main thing you should worry about. Fuel goes bad that looks perfectly fine. It is common for fuel to go bad if not stored properly. If your engine is giving you fits try

borrowing a tank of your buddy's fuel. You may keep your sanity!

Flight Techniques

Round-and-round you go! To spin:

- Climb to a very safe altitude, say 300 feet. In the event of a mishap, this altitude will allow you plenty of time to recover (especially important for your first attempt).
- Pull back on the throttle and elevator.
- When the model stalls and the nose drops past horizontal, apply full left rudder and full aileron and hold the elevator full up.
- The model should now be spinning its little heart out with its nose at about 45 degrees below the horizon. If the rotation is slow, add rudder throw. But do it a little at a time.
- If the model still doesn't enter the spin properly, increase elevator throw, or add weight to the tail a little at a time to move the CG farther back until the model does spin. Don't go crazy with adding weight or your model might become unstable and difficult to fly.

To recover from a spin (this is very easy):

- Let go of the controls! The model may rotate once or twice more, but it should recover by itself.
- Let the nose drop naturally to regain airspeed and unstall the wing.
- Gradually add up-elevator and apply some power to bring the model back to straight and level.
- Exit the spin on the same heading as you entered it but at a much lower altitude (at least, in a perfect world, you should). If the model does not stop spinning cleanly, apply slight opposite rudder and aileron to stop its rotation.

Cheap Chinese Servos

Found this on the Internet, and it's very interesting as to the author's experience with servos manufactured in China.

HOW DO THEY STACK UP? For a long time there was a very limited choice of servo brands.

Futaba, JR and Hitec were the main servo manufacturers and although their offerings have always been of excellent quality, the prices have also been quite high.

And then the Chinese started making servos that they now sell under a wide number of different brands.

But are they any good? When a single faulty servo can cause a very expensive crash, is it really worth trying to save a few dollars

by purchasing a cheap servo from an unknown manufacturer?



Testing servos

Over coming months I'll be testing an increasing number of different Chinese-made servos of all types and brands.

Right now I'm building a test-rig that will automatically plot speeds, accuracy, centering, overshoot, torque, current-draw and other important aspects of a servo's performance.

But in the meantime, I've rounded up a few good and bad examples.

The Good

I've had very good success with the following servos:

- Hextronic HXT900 (cheap, powerful light)
- Scanner RC servos (powerful light, reliable)
- Vigor VS2 (very cheap and good value)

I'll be posting more in-depth reviews of these little gems shortly.

The Bad

Perhaps the worst servos I've ever had the misfortune to waste my money on are the TowerPro MG995 hi-torque

metal-gearred servos you often see advertised on eBay and various online model shops.

These are an extremely heavy servo with poor accuracy, massive amounts of over-shoot, highly variable centering and low levels of reliability. While I might be prepared to risk one on an old model truck or buggy, I most certainly would not dare to use one on a model airplane.

And despite what some of the ads claim, these are not coreless servos. In fact one of the reasons they perform so poorly is that they use a heavy 3-pole motor that has lots of inertia.

An updated version of this servo (marketed as the Toward Pro MG996R) is quite a bit better in its accuracy and centering but, because it uses the same cheap parts, still can't be considered a servo worth trusting an expensive model to.

The Rest

Right now I have a desk littered with servos of all sizes, shapes and brands so the testing task ahead of me is somewhat onerous -- but stay tuned because I'll gradually work my way through all the options and provide a detailed report on my findings.

Summary

Yes, the Chinese are getting their act together when it comes to making servos that can rival the big names but be very careful, there are some awfully bad designs out there and others that are quite badly assembled.

Those on the "What's Good" list can be purchased with some degree of certainty that they'll provide good service but if you're thinking of buying an unknown brand, be very careful.

Lufbery Field

The proposal to name the Aerodrome at Cedar Creek Park in honor of Major Raoul Lufbery has been completed to the satisfaction of the committee. The committee consists of Charles Lando (Chairman), Harvey Schwartz (Co-Chairman), Russell Rhine (Researcher) and Ed Smits (Nassau County Historian).

We are awaiting letters of support from a few persons we feel would provide a high level of credibility and support for our cause. Once we have those letters in hand, we will create a package that will be sent to Thomas Suozzi and a few others in his administration.

We will keep you informed as we progress in our efforts.

Flight Techniques

The Chandelle

The Chandelle is defined as an abrupt climbing turn in which the momentum of the plane is used to attain a high rate of climb. It is often referred to as a climbing turn. Historians suggest it was used to escape from a dogfight during WW I, so it is a perfect maneuver for this kind of model.

To achieve airspeed and momentum, start the maneuver with a slight dive, then enter straight and level and follow through with a sharp climb while executing a 180-degree turn (away from the judges). Do not stall your model by climbing too steeply, and for maximum points, exit the maneuver in level flight heading in the opposite direction of the entry. I recommend a climb of about four to five times the aircraft's wingspan (about 30 feet for a 72-inch-span model). This should be sufficient to show the judges a prototypical climb for your model; downgrades come from not executing the maneuver smoothly and not exiting 180 degrees from the entry.

July Birthdays

- 12 *Stan Blum*
- 13 *Tom Scott*
- 20 *Gene Garavelli*
- 20 *Tom Tavorario*
- 25 *Phillip Miceli*
- 28 *Fiore Acovino*
- 31 *Jack DeFranza*



Product Review

Precision Aerobatics Vox Props

Vox EP propellers have been designed and manufactured with one objective in mind - to maximize performance at the prop end, with the highest possible efficiency. They offer two lines - electric and gas. Their Electric



propellers are made of ultra light, high-quality German Beechwood allowing higher acceleration rate and thrust, combined with precision, which is a "MUST" for high-performance airframes, and is an added bonus for the less demanding EP RC aircraft. Vox gas propellers are made of laminated hardwood for added stability and strength. Designed for gas engine operation they feature heat and distortion resistance, low-ir friction (so they are quiet) and greater thrust. The accurate machining guarantees accurate flight performance, making them a perfect choice for IMAC and precision aerobatics. For more information. go to precisionaerobatics.com

CHICKEN WINGS™



BY MICHAEL AND STEFAN STRASSER

