



Smoke Signals

Monthly Newsletter of the Meroke RC Club

June 2008

AMA Gold Leader Club #458 - established 1963

Soaring

Once again, we had another great lecture. Last month, Ed Anderson of the Long Island Silent Flyers (LISF) gave a well received presentation on sailplanes. Flying out of a field in Syosset, Ed and his club are devoted to this aspect of the model aircraft hobby. From the presentation, we saw that flying sailplanes is more complex and challenging than any of us thought.



Ed brought a few of his sailplanes and discussed the design of each in great detail. He also went deeply into the manner in which the planes are launched, flown and landed. He discussed hand-launching, electric-power assisted launching and of course, the electric driven launching device.

For information about the LISF, go to their website - www.lisf.org. Also - Ed Anderson wrote a great article - "Glider Clubs and the Park Pilot Program" - that appears on page 48 of the June 2008 issue of Model Aviation.

And to think that's all - it's not. Phil has, with the help of Ed and members of the LISF, set-up a "Soaring Day" at

the Cedar Creek Aerodrome.

Soaring Day - June 19th

Starting at 10 AM, Ed Anderson and the LISF will host a "soaring day". They will bring a few electric gliders and show us how to look for thermals. Following this, there will be a series of events to test your skills. Just show up. Refreshments will be served.

Meroke Calendar

June 5 th	Club Meeting 8 PM - Show & Tell
June 8 th	Open Fun Fly
June 14 th	Staten Island - Pattern Primer
June 19 th	Club Meeting 8 PM - Tom Hunt from FLY RC Magazine
June 21 st	Club Picnic
June 21 st	Warbirds over Long Island - Eastport
June 22 nd	Fun Flies at Aerodrome
June 3 rd	Club Meeting 8 PM - Show & Tell
July 17 th	Club Meeting 8 PM - Gary Fitch AMA District II Vice President
July 19 th	"Soaring Day" hosted by LI Silent Fliers at Cedar Creek Aerodrome
July 20 th	Fun Flies at Aerodrome
	Some Important Future Dates
August 3 rd	Come Fly with Us
August 9 th , 10 th	Long Island Scale Qualifiers
September 18 th	Club Meeting 8 PM - Ed Alt on NSRCA Pattern Flying
December 4 th	Awards Dinner

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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Webmaster	Ted Evangelatos	
Social (Coffee)	Irv Kreutel	Al Hammer
Raffles	Nick Guiffre	Curtis Underdue
Show and Tell	Ben Corbett	
Video Librarian	Bob Cook	
Come Fly With Me	Mark Klein	Dave Bell
Open Fly-In	Ernie Schack	Tony Pollio
Monthly Fun Fly	Bob Reynolds	Gene Kolakowski
One Fly	Ted Evangelatos	
Picnic/Dinner	Al Weiner	Chris Mantzaris
	Nick Guiffre	
Contest Directors	Allen Berg	Tony Pollio
	Ernie Schack	Tom Scotto
Flight Instructors	Allen Berg	Ted Evangelatos
	Douglas Frie	Dan Gramenga
	Mark Klein	Gene Kolakowski
	Ken Mandel	Tim Murphy
	Tony Pollio	Rick Porqueddu
	Bob Reynolds	Bill Streb
	Ernie Schack	Al Weiner

From the Editor

It's time again for our annual Meroke Open Fun Fly. On Sunday - June 8th, fliers from the Merokes and other clubs and independents will take to the skies with their well-tuned Fun Fly aircraft. Over the years, we have been blessed with some exciting competition and even some tragic crashes as these skilled pilots push the envelope of what their planes can do in the events.

This is one of the most important activities of the Merokes during the flying season and we need all of the Meroke members to support this event. Over the years, it seems that it is always the same

Open Fun Fly
Cedar Creek Aerodrome
Sunday - June 8th
Registration begins at 9 AM
All Fliers welcome

members who volunteered and yes - sometimes get volunteered. Even if you have given up flying for any number of reasons, your support as a member is still in demand.

Last weekend, there was a clean-up scheduled for the Cedar Creek Aerodrome. 15 people - yes, that is correct - showed up. There are approximately 100 members in the Merokes and another almost 400 others who have permits. Using very high-leveled mathematics - only 3% of the permit holders managed to help in this effort. Remember - the more who show up - the less there is to do per person, and the quicker the field is open for flying.

There is no update in this month's newsletter for the Open and Top Gun Fun Flies as the park was closed on the day they events were originally scheduled. And since I was on vacation for the second meeting in May, I have no write-up on May's Show & Tell. In closing - a big Meroke thanks to *Dennis Andreas*, a non-member, for all he does for our club.

President's Message

Now that it's June, we turn up the RPM's and enter into full swing with everyday flying and the onset of our Club events. We start with the June 8th "Open Fun Fly" and I want to thank all those who have volunteered their time to help with the event. Many thanks also goes to Ernie Schack and Tony Pollio for their continued support and organization of this event year after year. The effort put forth from "behind the scenes" is what makes these events happen, so when you see Ernie and Tony say "Thanks" for stepping up to the plate. It takes many hands to make this event happen on the day, so please show up, ask how you can help if you haven't already volunteered and be a proud member of the Merokes by exhibiting a fine display of R/C Flying for our Families, Friends and our General Public. We are hoping for a large turnout both from competing Pilots and the viewing Public. KJOY 98.3 have offered to help us with announcing the event to all of Long Island and Newsday will be carrying an article in the "Events" section, so we do have the event advertised. Let's hope for good weather and some good competition in the events. We are also encouraging the Intro Pilot Program and hope to have a good number of Intro Pilots standing by.

August 3rd is our second "Come Fly with Us" and Mark Klein and I hope to have another successful event. I will speak more on this later in the season, but remember we have once again been recipients of the "TAG" program award from the AMA and have received \$1000.00 to support this event. The money must be used towards enhancing and growing our Intro Pilot program and the Board has met and decided how to disperse the monies in this effort. We now have 9 qualified and registered Intro Pilots in our Club.

I hope you all took advantage of the weather this year, as it has been very cooperative for flying. I haven't heard of many mishaps, so I am thankful we are continuing to follow the safety rules and the guidelines put forth by the Nassau County Parks and the AMA. Safety is and should always be a main concern at the AERODROME.

As always, if you have any questions or concerns about any issue in the Club, feel free to speak with any of the Board members. We are there to make sure the Club follows the AMA guidelines and our By-Laws and we strive to continue to make our Club inviting and interesting for our members.

I like to end by saying thanks to Russ Rhine for a superb newsletter, month after month, Ted Evangelatos for keeping up with me on all the website changes, deletions and additions that are required to keep it up to date, and Dr. Phil for his continued interest in bringing us Programs that went far beyond my expectations. He has a full plate of Guests coming our way and is currently working on arranging various types of flying demonstrations at the Aerodrome. All the programs are posted in the newsletter and at the Aerodrome and everyone is invited.

Also thank you again to all the Club volunteers serving on the many Committees we have. We are a highly recognized Club within the AMA and the Community and we earned this recognition by commitment and dedication to our Club.

Have a happy and healthy summer and be safe enjoying your hobby.

Expanding RealFlight Fun!

The excitement and variety of RealFlight continues to grow! Expansion Pack 5 features a total of 18 new aircraft, including several amphibious models that can be flown on the 3D Sub Base flying site. The incomparable graphics and flight accuracy that set RealFlight apart from the competition is still here...proof once again that the industry's best RC simulator keeps getting better - and bigger!

Fourteen fixed-wing aircraft including:
RealFlight Airliner, Republic Seabee, Great Planes 38%, Extra 330S, ElectriFly Pluma 3D Foamy, Top Flite P-51 Mustang, Death Foil, Krill Katana, RF-97 Sailplane,

Four new rotary wing designs featuring:
AH-64 Apache, Align T-Rex 500, Synergy N9

Two awesome 3D flying sites: Sub Base, Obstacle Course 6 and a super Photofield site!

Price: \$29.99

Ask Dr Phil

Dr. Phil,

I was having a conversation with a fellow club member on Wing Loading and what it is. Can you help us understand the topic better?

Thanks, Phil Miceli

The wing loading of an aircraft is the measure of weight carried by each given unit of area. For model aircraft, wing loading is expressed as ounces per square foot (oz/ft²). Experience with different models will make this figure more meaningful to you.

Why is Wing Loading important?

- Wing loading is the only indicator of how "heavy" an aircraft is. The actual weight of an aircraft is meaningless. A 50 lb model having as many square feet of wing area is a lightweight. A 6 lb model having 2 square feet of wing is very heavy and will fly like a lead pipe.*
- The lighter the wing loading, the slower the aircraft can take-off, fly and land. It will also have a better climb.*
- A larger model can have a higher wing loading and fly comparably to a smaller aircraft having a lower wing loading due to differences in the aerodynamics of different size aircraft. For example, let's say we have two aircraft that are absolutely identical except for physical size. The smaller model has a 36" wing span while the larger aircraft has a 108" wing span. The smaller model may have a wing loading of 8 oz/ft² and the larger aircraft may have a wing loading of 35 oz/ft². Both of these aircraft may perform nearly identically at substantially different wing loadings due to the difference in size.*

Calculating Wing Loading is not too difficult. Let's say we use an aircraft weighing 5-1/2 lbs (5 lbs 8 oz) with 600 square inches of wing area. Calculating the wing loading requires that the wing area be converted to square feet (ft²) and pounds to ounces.

- 1) Convert the area to square feet. There are 144 (12 x 12) square inches in a square foot.
 $600 \text{ in}^2 \div 144 = 4.17 \text{ ft}^2$*
- 2) Convert the total empty weight (ready-to-fly*

with no fuel) to ounces. There are 16 ounces in a pound. $5.5 \text{ lbs} \times 16 = 88 \text{ oz}$

3) Divide the weight by the area:

$$88 \text{ oz} \div 4.17 \text{ ft}^2 = 21.1 \text{ oz/ft}^2$$

Using round numbers, this gives the aircraft a wing-loading of 21 oz/ft². You can perform the entire calculation in one shot using simple substitution:

$$(\text{Weight} \times 2304) \div \text{Wing Area}$$

Where weight is in pounds and wing area is in square inches

Plugging the numbers from this example into the above formula gives us this:

$$(5.5 \times 2304) \div 600 = 21.1 \text{ oz/ft}^2$$

For multi-wing aircraft, divide the overall weight of the aircraft by the total wing area for all wings.

Hi Dr. Phil,

I hope this will help someone! I wanted to fly my heli, but my Spektrum radio would not hold a "bind" this morning. I turned it on and nothing worked. I would rebind it and it would work fine, but when I turned everything off and later turned on my Tx, then my Rx, nothing would work. This happened several times, and I was getting ready to pack up and send everything back to Horizon Hobby.

Guess what I found out. Using one of your unique flight tables, I would sit my heli crossways with my flight box to my left. I would set my transmitter down between the two rails that

border the area where a plane's tail wheel would normally rest. It fits there very nicely, and I would sort of hook the handle over one of the rails to keep it from getting knocked off the table. Evidently, when the



transmitter was sitting on the table, that rail would press up against the 'bind' button on the back. I would flip on the Tx switch, and then turn on the Rx, and

unwittingly the bind button was being held in causing the system to delink! Crazy! I rebinded it one more time, and had no more problems.

I must say that I've had the DX7 for nearly a year, on two helis and two planes, and although some strange things have happened that I've had to solve, I can't say that any of them were caused by the Spektrum radios. I'm very, very happy. And, I must say, Horizon's service, when I've needed it, has been fast and beyond expectations. I loved Futaba for 15 years, and they have terrific products. But Horizon is giving them a run for their money.

Ken Casser

Thanks for this valuable piece of information. I hope the photo shows exactly what happened. Congratulations on a good piece of detective work.

See you at the field, Dr Phil

Upcoming LI Skyhawks' Events

June 21st - Warbirds Over Long Island

Giant scale Warbirds (IMAA legal 1914 to present). A rain date has also been scheduled for June 22nd. For information, contact the Contest Director - Michael Gross 631-281-7633.

August 9th & 10th - LI Scale Masters Qualifier

Regional qualifier for the 2008 US Scale Masters Championships, to be held in Sarasota, Florida during October. For more information, contact the Contest Director - Nick Zirola Jr. 631-467-4765.

You can find more information on the LI Skyhawks' website - www.liskyhawks.org.

Directions to the LI Skyhawks' flying field: Take the LI Expressway to exit 70, go south on Country Road 111. Exit at Country Road 51, make left at stop sign and proceed $\frac{1}{2}$ mile to field on the right.

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2008 Take-Off and Grow Program

Once again, the Merokes RC Club has been chosen to be one of only 14 AMA clubs in the United States to be honored to be a participant in the AMA's Take-Off and Grow (TAG) Program. With this honor comes the responsibility to bring RC flying to the public. On Sunday - August 3rd at the Cedar Creek Aerodrome, we will hold our 2nd Annual "Come Fly with Us".

For this event, we need a large turnout from our membership for the many tasks necessary to make the day very successful.

Tech Tip

CA loses its potency if exposed to high temperatures for extended periods of time. Don't store CA in any areas that are exposed to summer heat, such as the car trunk, toolbox, or near a window. CA becomes thicker and darkens with age.

CA is non-toxic. CA fumes are vaporized cyanoacrylate monomers. They will irritate sensitive membranes such as the eyes, nose and throat. The moment the fumes touch the membranes, they are polymerized by body moisture and become inert. They never enter internal body systems. If you're sensitive to CA's fumes, try using odorless CA.

The only thing that can be added to thick CA to thin it is thin CA. Any other thinner will quickly harden the glue.

Use only odorless CA on white foam. Test accelerators for foam compatibility. Don't use too much accelerator on foam; it will generate excess heat when the CA cures and may cause the foam to melt.

Most CA has a shelf life of about one to two years. This can be extended by keeping it out of the sun and stored in a cool, dry place. Moisture shortens its shelf life; don't store CAs in very humid environments such as damp basements.

Model Engine Lubricants

Found this great article and it seems to add something to a number of previous articles about engine lubricants printed in Smoke Signals.

Most people don't give much thought to the type, brand or quantity of oil that goes into their model engines, they simply buy their fuel from the local hobby shop and leave the chemistry, physics and science to someone else.

That approach works just fine, but if you want to get the maximum life and optimum performance out of your engine, you might want to learn a little more about the oils that go into that fuel.

What does the oil do?

The oil used in model glow-plug engines actually does a lot of things.

Although (as you would expect) its main job is to lubricate the moving parts and reduce wear, it also has several other jobs.

One of those other jobs is to protect the steel components from rusting when the engine is not running, a task that is not as simple as you might think.

This is because the primary component of model fuel is methanol, an alcohol that just loves to absorb water from the atmosphere and, as we know, **water+steel=rust**.

Another problem is that most fuels contain nitro-methane, a chemical that can produce corrosive (acidic) byproducts when it's burnt. This means that the oil in your fuel not only has to prevent any metal-to-metal contact, it also has to ensure that neither the acids nor the water that form inside the engine are able to reach the steel bearings and crankshaft.

Unfortunately, some synthetic oils are not very good at protecting the steel parts of our engines from the risk of rust and corrosion. This means the manufacturer has to add special anti-corrosion agents and these are not always effective (more on this later).

How much oil is enough?

Many people probably wonder why it is that their 2-stroke lawnmower, weed-whacker or chainsaw can get by

with just a tiny amount of oil in its fuel. Indeed, most 2-stroke gasoline engines need no more than 4% (25:1) and many are happy with 2% (50:1). So why is it that our glow engines are normally fed on a fuel that has between 17% and 20% oil?

Well there are several reasons for that...

Firstly, most gasoline engines are built differently to glow motors. The main areas of difference are the bearings used on the connecting rod. In a 2-stroke gas motor, needle-roller bearings are used rather than the much simpler bushings found in our model engines.

Needle-roller bearings need very little oil to keep them working but a bushing needs far more. That's because the bushing relies on having enough oil to form a layer thick and strong enough to stop the two metal surfaces from touching.

Secondly, gasoline itself has a small amount of lubricating ability, but methanol has virtually none. This means that gasoline effectively has a small degree of oiliness built into it, which reduces the amount of oil you have to add.

Another reason that's seldom appreciated for the hi-oil ratios we run in model engines is simply because that's the way it's always been. Back in the early days of model engine design and production, metals, machining and design simply weren't as good as they are today. Nor were the oils we used.

This meant that very high oil ratios (20%) were always recommended to provide a suitable safety-margin against engine damage.

But things are different today.

Now we have CNC-controlled machinery, far more exotic alloys and plating processes, and oils that offer vastly improved protection and lubrication.

Yet many manufacturers still recommend 20% oil and most commercial fuels contain at least 17% (at least in the USA).

However, given the advances in both engineering and oil technology, it is now possible in some cases to run as little as 10% oil without compromising the life or performance of an engine.

So why do manufacturers still recommend such high oil contents?

Well only a few advanced synthetic oils are good enough to allow a lower oil percentage to be safely used and since the engine manufacturer has no control over the oil, they play it safe and assume you're using an inferior brand.

One club has been running its engines on just 12% of a hi-quality oil for nearly 18 months and there has not been a single lubrication-related problem in that time.

What was noticed was that the engines ran cooler, longer flight times for a given tank size, a lower and more reliable idle, easier starting (especially in winter), less exhaust residue on our models and several hundred RPMs more power than when used with higher percentages of lower-quality oil.

In fact, it was their experience that when a lower percentage of a very hi-quality oil is used, it's like adding an extra 5% nitro-methane, so that a 5% fuel performs like a 10% one. With nitro prices currently going through the roof and availability becoming an issue, that's a great way to save money without sacrificing performance.

What type of oil?

There was a time when the only oil used for glow-plug model engines was castor oil.

Castor is a natural oil obtained from the castor bean and it has many valuable properties from the perspective of a model engine lubricant.

Firstly, it is very slippery -- which is to say it has great lubricity.

Secondly it has a very high film strength.

Why is film strength important?

Well oils protect our engines by ensuring that there's no actual contact between the metal parts. As soon as metal touches metal, you get wear so it's the oils job to keep the moving parts from actually touching and it does this by forming a thin film between them.

In the case of castor oil, this film is very tough and it requires a lot of pressure to force metal surfaces together when they're separated by a microscopic layer.

Another excellent property of castor oil is that when it gets very hot, it doesn't just burn or boil away into nothing -- it undergoes an astonishing change. It polymerizes.

Polymerizing is when the thin film of liquid castor oil turns into a solid (but still slippery) film somewhat like plastic.

Even when an engine is significantly overheated, this polymerized castor layer can help prevent the metal to metal contact which kills engines.

So, after reading all this you might think that castor oil is the perfect model engine lubricant - and there are some folks who will agree with you.

However, castor does have its drawbacks.

First, it is a very viscous oil, which means that the thin film it creates tends to produce drag between the moving parts. This is most obvious when temperatures are low. A lower viscosity oil will usually allow an engine to produce more power because its drag is lower.

Secondly, the very thing that makes castor such a good oil at extreme temperatures (polymerization) also means that even the best castor eventually produces a build-up of carbon and a residue often referred to as "varnish" inside the engine.

You can often tell an engine that's been run with castor oil in the fuel because the cylinder and muffler will eventually become stained brown or even black, by this polymerized castor oil. Eventually, this varnish can build up to the point where it adversely affects the engine's performance -- particularly in the case of 4-stroke engines where carbon on the exhaust valve can impede the flow of exhaust gasses and varnish can cause the valves to stick.

So is there something better than castor oil?

Well yes and no.

Around the early 1980s, a number of synthetic oils were developed and these offer some benefits (but some limitations) when compared to castor.

Firstly, these oils tend to significantly reduce the amount of carbon and other deposits that form inside an engine.

Most of these oils simply don't burn or burn with very little ash.

Secondly, these oils are usually much lower in viscosity than castor but they maintain what viscosity they do have even at high temperatures. This means that the drag produced by the oil film is lower and therefore you can often see a performance increase when switching from a castor oil to a synthetic one.

Unfortunately not all synthetics are born equal.

In the USA, most of the common synthetics are made from a base called Polyaklylene Glycol (PAG), a substance not too dissimilar to anti-freeze.

This oil is cheap, readily available and does an adequate job of providing lubrication when used in adequate quantities (17%-25%). Most PAG lubricants are actually designed for use in airconditioning systems and refrigeration pumps. Unfortunately, they're not really designed for the high temperatures often found in model engines which means that when this oil is used as a lubricant for model glow motors, you must be very careful to avoid lean runs.

More expensive synthetics are usually made from an ester base. These oils offer a number of advantages over PAG synthetics. Those benefits include most stable viscosity, better hi-temperature performance and a lower volatility.

Most US-based synthetics are PAG-based (with the exception of the oils used by Cooper Fuels) and most European synthetics are Ester-based.

This explains why most US fuel manufacturers use higher oil-percentages than their European counterparts. While it's normal to have 17% or more oil in the USA, the Europeans are getting excellent results from fuels that contain as little as 10% of ester-based synthetic oils.

But as you've already seen, synthetics are not without their weaknesses, which is why you can now also by oils that are a blend of synthetics and castor.

These appear to offer the best of both worlds -- the clean-burning, low friction of synthetic oil with the ultra-hi temperature and corrosion resistance of castor oil.

New Meroke Member

Peter Pleines

June Birthdays

- 1 *Charles Folz*
- 3 *Pat Savarese*
- 5 *Bernard Zarem******
- 6 *Joe Longo*
- 13 *Terry O'Grady*
- 24 *Sal Seddio*
- 28 *Joe Cieslewicz*
- 28 *Doug Frie*
- 30 *Frank Anzaldi*

** Big One*



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