

SMOKE SIGNALS

Recently Harvey Schwartz informed me that down at the field "The birds have hatched and it is amazing." Harvey stated that "This is important to illustrate...to show just how we have blended with nature and contacted [Laura Schofer](#) at the "Wantagh Seaford Citizen" who posted the following article. Nice going Harvey!



ALL THE LITTLE BIRDIES GO TWEET, TWEET, TWEET. These fledglings are tree swallows born several weeks ago at the Lufbery Aerodome, Cedar Creek Park in Seaford. photo by Harvey Schwartz They are birds of a feather – members of the Meroke Radio Control Club and a family of tree swallows who have set up house in the eaves of the shelter on runway one at the Lufbery Aerodrome at Cedar

Creek Park in Seaford.

Like the birds, these humans have a passion for flying; they build and fly radio control model aircraft.

"We've melded with nature," said Harvey Schwartz, a member of the Meroke Radio Club, who explained that the tree swallows turned up in June to build a nest and lay their eggs. Now the happy couple have three fledglings who make sweet music while club members tweak their radio-controlled airplanes and chat with each other.

"There is a cut-through near the plant that has a large flock of swallows," explained club member Mel Brenner, who added that tree swallows have black heads, a brown splash across their necks, and a split tail.

"The parents took turns sitting on the eggs and then about a week ago three babies were born," said Mr. Brenner, pointing to the nest. "Do you see how their little heads are popping up. Mom and dad fly back and forth, bringing their babies dragonflies and other insects."

"Pure protein," added Ron Berg. "It's good for them. The tree swallows are pretty smart, building their nest where it's inaccessible to predators."

And then right on cue, either mom or dad came swooping in to feed the babies without concern for those humans near the nest.

This is not the only bird that hangs out with the guys at the aerodrome. John Occio brings his parrot down to chat with them and, finally, there is Ralph the Seagull, adopted by Mr. Schwartz about two years ago.

"I share my sandwich with him," said Mr. Schwartz, a Merrick resident. "He likes pizza and loves Snackwell cookies. This is his home away from home and he makes sure he is the only seagull down here.

"We have a symbiotic relationship [with these animals]. They keep the insects away and other pests and we co-exist in a good way," said Mr. Schwartz.

Calendar

August 1, 2013

Club Meeting

August 10, 2013

Whitman Flyers "Electric Fly-in"

For more info:

www.whitmanflyersli.com

August 15, 2013

Club Meeting

August 18, 2013

Meroke "Paintball Shootout"

See next page for event information

*** For more information on upcoming events go to www.liama.org and click on the events calendar.

BIRTHDAYS

Aug 3 Nicholas Guiffre

Aug 21 Elias Miranda

Aug 23 Larry Rosenthal

Aug 30 Andrew Accovino

If you want to view The Long Island Aero Modelers (LIAMA) website go to:

www.liama.org

Send all suggestions to:

newsletter@meroke.com



MEROKE RC CLUB

OUR 1ST ANNUAL - AMA SANCTIONED

PAINTBALL SHOOT OUT

LUFBERY AERODROME IN CEDAR CREEK PARK, SEAFORD, NY

SUNDAY AUGUST 18, 2013

11:00 AM - 2:00 PM

RAIN DATE AUGUST 25, 2013

FUN FOR ALL AGES - BRING THE KIDS

WE SUPPLY THE PAINTBALL EQUIPMENT

YOU HAVE THE FUN

SHOOTING THAT PLANE OUT OF THE SKY

\$5 FOR 10 SHOTS...\$20 FOR 50 SHOTS

Children under the age of 12 require adult supervision

FOR MORE INFORMATION, PLEASE VISIT OUR WEB SITE AT www.meroke.com



Here is part 2 of Dave Clerke's "WHAT FUEL IS BEST FOR YOUR ENGINE" which deals with FUEL REQUIREMENTS FOR LARGER ENGINES.



What fuel is best for your engine? by Dave Gierke

FUEL REQUIREMENTS FOR LARGER ENGINES

As an engine's size (displacement) increases:

It requires less lubricating oil percentage.

It demands less nitromethane percentage.

If you're a traditional modeler who believes that high oil percentages are always needed throughout the engine displacement spectrum, take time to absorb the following two concepts.

LARGER ENGINES REQUIRE LESS LUBRICATING OIL PERCENTAGE (CONCEPT: LUBRICATING AREA TO DISPLACEMENT RATIO)

The following quote was excerpted from a paid advertisement (Duke's Mixture) from the late engine manufacturer, Duke Fox, (Fox Manufacturing Company) in the August 1989 issue of Model Airplane News magazine:

"... Larger motors need less oil, percentage-wise, than small ones. The reason being that as the size of the motor increases, the displacement goes up as the cube, while the area to be lubricated goes up as the square. Thus a motor with a 1.5-inch bore would be as well lubricated on a 10% oil mix, as one with a 0.75-inch bore would be with a 20% oil mix." This is known as the lubricating area to displacement ratio.

When doubling the engine's bore from 0.75-inch (.33ci, with a stroke of 0.75 inch) to 1.5-inch (2.65ci, with a stroke of 1.5 inches), displacement increases as the cube of the bore increase (0.75 in. * 2 = 1.5 in.); therefore 23 (2 * 2 * 2) = 8 times.

Assuming similar design features, an engine that is 8-times larger than another (ci), will consume fuel about 8 times faster than the smaller engine. Conventional thinking suggests that 8 times the lubrication will also be needed for the larger engine. However, the large bore engine (1.5 inches) has only 4 times the lubricating area of the small bore engine (0.75 inch), since cylinder area increases as the square of the bore increase, or 22 (2 * 2) = 4 times.

Consequently, the larger engine receives twice the lubrication of the smaller engine (8 ~ 4 = 2). By reducing the larger engine's lubrication content by half (from 20 to 10%), it will lubricate the same as the small engine. (Bore1 ~ Bore 2 * Bore 1 % = Bore2 %), (0.75 ~ 1.5 * 20 = 0.5 * 20 = 10%). Based upon traditional lubrication content, here are a few engine displacements (bore = stroke) with their calculated lubrication percentages:

Disp (ci)	Bore (in)	Suggested lube%
2.65	1.50	10
1.09	1.12	13.4
0.65	0.94	16
0.47	0.81	18.5
0.33	0.75	20



FUEL FACTS

RINGED PISTONS, BALL-BEARING-SUPPORTED CRANKSHAFT: SPORT FUEL

<u>Engine Disp</u>	<u>Caster Oil Content</u>	<u>Syn. Oil Content</u>	<u>Total Oil</u>	<u>Nitromethane</u>	<u>Methanol</u>
2.20	1.1%	8.9% syn.	10%	2%	88%
1.80	1.2%	9.8% syn.	11%	4%	85%
1.20	1.4%	11.6% syn.	13%	7%	80%
0.75	1.7%	13.3% syn.	15%	9%	76%
0.60	1.8%	14.2% syn.	16%	10%	74%

LARGER ENGINES DEMAND A LOWER NITROMETHANE PERCENTAGE

In 1948, three American engine manufacturers released their versions of the revolutionary 1/2A glow engine, but the so-called “baby engines” would soon cause problems for unsuspecting modelers. Initially, they were expected to run on fuel that was formulated for larger displacement glow ignition engines that contained mostly methanol. The tiny engines protested by being difficult to start and touchy to adjust; they vibrated, misfired and often quit cold. As it turned out “cold” was the operative word for understanding their balky operation.

Small engines have a much higher *cooling area to displacement ratio when compared to larger engines; therefore they overcool, disrupting the normal combustion process. Adding 25- to 35% nitromethane solves the problem, since it provides additional heat to the tiny engine’s operating cycle – it also adds power. *Cooling area includes both the cylinder and the cylinder head.

The cold-running QA experience helps to explain why engine designers enlarge the cooling fin area (head and cylinder) as displacement increases. Even with enhanced fins, acceptable head temperatures are often difficult to maintain, illustrating why big engines demand lower percentages of nitromethane. Elevated cylinder head temperatures often lead to potentially destructive combustion problems such as pre-ignition and detonation.

From the chart below, various ratios of cooling area (cylinder + head) to engine displacement are compared, ranging from the largest to the smallest engine; notice that the baby engine (0.049) has almost four times the cooling area per unit of displacement, than the 2.65 ci engine (12.8 ~ 3.3 = 3.88). Also note the approximate nitromethane percentages suggested for the given displacements; these are difficult to predict accurately because the engine’s design plays a significant role in its ability to cool:

<u>Disp (ci)</u>	<u>Area/disp</u>	<u>Suggested nitro%</u>
2.65	3.3/1	2
1.09	4.5/1	7
0.65	5.3/1	10
0.47	5.5/1	13
0.049	12.8/1	35



NON-TRADITIONAL SPORT FUEL BLENDS

Ringed pistons, ball bearing supported crankshafts

The next chart identifies non-traditional sport fuels for selected displacement, ringed piston engines having ball-bearing supported crankshafts. As we have seen, larger engines require less lubrication and nitromethane content to attain their operational sweet spot. What can be expected? A lower, steadier idle, a quicker, crisper throttle-up, and a more powerful wide-open-throttle performance, while enjoying the same level of engine component protection. The following fuel blends for various engine displacements are offered for your consideration: Note: the ratio of synthetic to castor oil (8/1) is maintained from the traditional blend for ringed, ball bearing engines.

AS AN ENGINE'S SIZE INCREASES, IT REQUIRES LESS NITRO AND LUBRICATING OIL

The synthetic lubricant used for the all of these fuel blends is polyalkylene glycol, the relatively inexpensive UCON oil. There are a multitude of other synthetics that are available including polypropylene glycol, poly esters, and polyol esters, but they are much more expensive. Fortunately, as confirmed by several lubricant experts, when castor oil is mixed with almost any synthetic, a superior lubricant is produced.

CASTOR OIL HELPS TO COOL A HOT-RUNNING ENGINE

Another consideration for non-traditional fuels that use reduced lubricant percentages: Castor oil helps to cool any size engine, but it's especially effective with larger displacement engines where the ratio of cooling area to cylinder displacement is limiting heat rejection. Castor oil has been proven to carry away more heat through the engine's exhaust than any common synthetic. The reason? Castor oil doesn't burn in the combustion chamber until extremely high temperatures are reached; most synthetics flash from hot internal surfaces, such as cylinder heads and upper cylinders; often, many synthetics simply burn, adding to the engine's heat load.

Several options are available to the engine tuner to alleviate high cylinder head temperatures:

.....
Reduce the fuel's nitromethane content.

.....
Reduce the engine's compression ratio (add a head shim)..

.....
Reduce the engine's propeller load.

.....
Increase the fuel's castor oil content.

.....
The first two suggestions will probably reduce the engine's performance and should be used as a last resort. Reducing propeller pitch and/or diameter should probably be tried first. However, if over-heating is still a problem, add a bit more castor oil to the existing fuel blend. How much? Start with 0.05% extra, and increase from there.

WHERE TO OBTAIN YOUR FUEL?

After reading the fuel bottle labels at the hobby shop, and fuel-blender advertisements in model magazines and the Internet, more often than not, you'll find that all of the ingredients and/or their percentages are not listed. A representative advertisement might state the following: Helicopter formulations: two new synthetic fuels, 25 and 35% nitro blends available ... This is too little information. Here are some additional questions:

- ¶ Is the fuel intended for ringed or ringless pistons?
- ¶ What is the total lubrication percentage?
- ¶ Is there any castor oil in the lubrication package? If so, how much?
- ¶ Is there a target engine displacement for the fuel? If so, what is it?

Warning: from personal experience, don't hold your breath waiting for an answer from many commercial fuel-blending companies; some representatives won't give you the time of day, let alone a bit of air. Therefore, you can do one of three things:

- ¶ Buy their fuel, components and percentages unknown.
- ¶ Find a full disclosure fuel blending company that will work with you.
- ¶ Blend your own fuel.

Since blending your own fuel is beyond the scope of this series, I will concentrate on option 2: As an example, Sig Manufacturing takes a different approach to the fuel-blending business; their advertising states, "Each gallon is clearly marked with nitro and oil content ... [We use] 99.9% methanol, racing quality nitromethane, top of the line castor oil, and premium Klotz [synthetic] racing lubricants." Sig lists their helicopter fuel as: 15 and 30% nitro, 22 and 24% lubricants. If contacted, full-disclosure companies will probably address any other questions you may have.

There are a number of fuel-blending companies who will mix relatively small quantities of fuel (custom blends) to your specifications. Here are two:

- ¶ Cooper's/ S&W Hobby Supply cooperfuels.com; (610) 252-2040
- ¶ Red Max Fuels fhsoils.com/model.html; (800) 742-8484

There are others. A patient surfing of the Internet, or a question posted on a bulletin board or blog will eventually identify fuel companies who are anxious to blend and sell custom fuel to your specifications.

AUTHOR'S NOTE



I knew Chris Chianelli for 17 years. When I started writing a regular column for Model Airplane News, he was my contact person at the office. His extroverted, upbeat personality coupled with an extensive knowledge of engines eventually made for a close friendship. Each year we would meet for a while at the Toledo trade show, share a few laughs, talk sports cars and learn about his latest Saito engine adventure—Chris loved Saito 4-strokers.

About 10 years ago, Chris, always the sport flier's advocate, suggested that commercial fuel blenders list the ingredients on their container labels. As I recall, one fuel company president was outraged, accusing Chianelli of being ignorant along with other demeaning characterizations. Chris didn't relent, and he printed the nasty letter and continued his argument. Ultimately, because of his efforts, there are several full-disclosure fuel companies in business today. This article is dedicated to the memory of Chris Chianelli.



I recently had great fun with my QUAD COPTER flying it at the Lindenhurst Bubble and kind of got the bug for HELI'S after seeing what the other guys were flying. Everyone I spoke with steered me in one direction the BLADE mCX2 so here is an RC Universe article...Contributed by: Burc Simsek that sums up the great qualities of the BLADE CMX2 Helicopter.



INTRODUCTION



Lately, coaxial helis have become incredibly popular and for good reason. They are super stable, easy to fly and provide loads of indoor flying fun for both the beginner and expert pilots alike. The Blade mCX2 promises to be no exception to this. The mCX2 has been revamped from its predecessor to include a sleek looking fuselage complete with flying lights, an adjustable swash plate and more powerful coreless motors.

The Blade mCX2 is supplied in two flavors. The first is an Ready to Fly (RTF) with everything required ready to go out of the box. The second is a Bind and Fly (BNF) which requires a DSM2 transmitter to control the mCX2. Both versions come with a battery and charger with the only exception being that the RTF version also includes an MLP4DSM transmitter.

For this review, I have been supplied with both the RTF and BNF versions and I can't wait to get both of them up in the air, so without further delay, lets dig in and take a quick look at they perform.



SPECIFICATIONS



Price: (RTF) \$119.99* (BNF) \$89.99*

Type:	Ultra Micro Coaxial Helicopter
Main Rotor Diameter:	7.5 in (190mm)
Gross Weight:	1.0 oz (28 g)
Length:	7.9 in (200mm); Height: 4.7 in (120mm)
Motor Size:	Micro Coreless (2 installed)
Kit/ARF/RTF:	BNF
Control System:	5-in-1 receiver/servos/mixer /ESCs/gyro (installed)
Experience Level:	Beginner
Recommended Environment:	Indoor
Is Assembly Required:	No

Items Needed To Complete (RTF)

- None.

Items Needed To Complete (BNF)

- Aircraft transmitter equipped with Spektrum? DSM2? technology.

Key Features

- 100% factory assembled, test flown and ready to fly right from the box
- Precision swash plate with user-selectable control settings
- Factory installed 5-in-1 control unit with Spektrum 2.4GHz DSM2 compatible receiver, main motor ESCs, mixer , gyro and fully-proportional servos
- Sleek new body and flashing LED lights
- Coaxial, counter-rotating rotor head design
- 120mAh 14C single-cell 3.7V lithium polymer battery pack
- Powerful dual micro coreless motors
- Full line of replacement parts available
- MLP4DSM 4-channel transmitter equipped with Spektrum 2.4GHz DSM2 technology and digital trims

*(Accurate as of review date)

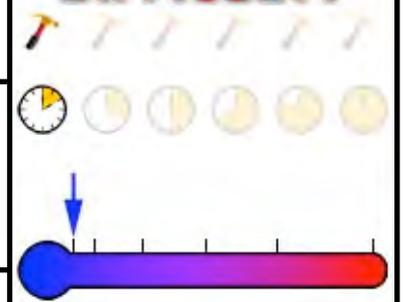
HITS

- Super stable
- Easy to fly
- Navigation lights
- Durable

MISSES

- None

DIFFICULTY





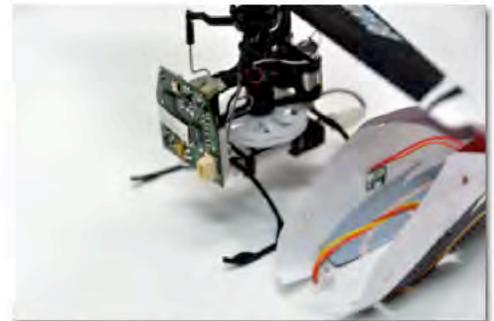
FIRST LOOK



Both the RTF and BNF versions of the Blade mCX2 arrive in well packaged boxes that could double as carrying boxes if required. The only difference between the two versions is that the RTF version comes with the transmitter and 4 extra AA batteries.



Included in the box, you will find the Blade mCX2, the 120mAh single cell LiPo battery, the charger and the transmitter (RTF version). AA batteries are provided for the charger and transmitter to get you up and running. The charger takes four batteries and the transmitter takes another four. The RTF version has already been binded to the receiver from the factory and is ready to fly as soon as the battery is charged. Binding the BNF is a simple process as well. Just be sure to select a single servo swash type from the transmitter options if you are using a heli model type.



A single 120mAh LiPo battery is provided with the Blade mCX2 which fits snugly in the battery compartment under the helicopter. The front of the mCX2 houses the 5-in-1 control unit which is a single printed circuit board that houses both servos, the receiver, and the gyro. The mCX2 also includes flying lights which are attached to the new full body fuselage. If needed, the small connector can be disconnected and the fuselage removed. Blade provides an optional carbon fiber tail boom with fin which can be used to give the mCX2 a different look and some more flight agility but in the process you will lose the new flying lights as they are attached to the fuselage.

FLIGHT REPORT



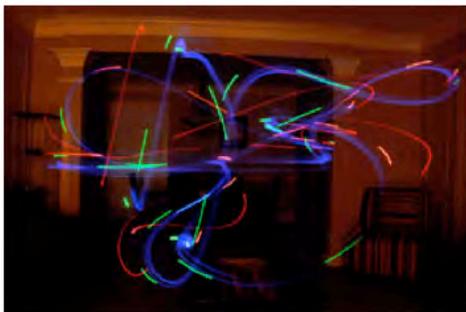
To get the RTF version of the Blade mCX2 ready to fly, all that needs to be done is to charge the 120mAh 1S battery with the supplied charger, install the batteries in the transmitter and you are ready for flight. The RTF version does not need to be binded as is has been already done in the factory. For the BNF version, I used a X9303 and choose a single servo heli model and binded it by turning on the heli first and then the transmitter with the bind button pressed down. I also set the BNF version to the high rates that the swash plate allows by moving the swash to lower blade links to the longer connectors on the swash plate.

Take off is easily achieved by simply applying throttle and the Blade mCX2 takes to the air and settles in a stable hover. On the RTF version I did not have to apply any trim what so ever. The BNF required a couple clicks to the rudder and it was hovering as stable as can be.

While counter rotating helis are not known for their acrobatic prowess, the Blade mCX2 has a few tricks up its sleeve. Pirouettes can be performed in both directions and the gyro does a good job at keeping the rotations going at constant comfortable rate. With a little cyclic applied while pirouetting, the mCX2 almost looks like it is performing a mini funnel. However jamming the cyclic to any corner while pirouetting will cause the mCX2 to fall out of the air. What is amazing though is that it just bounces off the ground and can take off immediately with no damage.

The Blade mCX2 is seems to be pretty durable. I have hit walls, tables, couches and even wedged the blade behind the couch and so far have not even nicked a blade or damage anything. Just be sure to lay off the throttle as you are calling mayday and the Blade will likely survive the incident. What I most enjoyed about the Blade mCX2 is that it literally hovers hands off as you can see in the video. With the higher sensitivity links connected on the swash plate, I was able to dart around the living room a with a little more spirit than with the RTF version that was set to the regular rates.

The new fuselage and the flying lights also aid in giving the pilot a better reference of the orientation of the heli and it is a blast to fly in the dark. Check out the shots of the blade as captured by an SLR with the shutter opened wide in pure darkness in the pictures below.





The Blade mCX2 manual is definitely oriented towards the beginner. There is sufficient detail provided to give someone who is not familiar with helicopters confidence to make their first flight a success.

[Blade mCX2 Manual](#)



SUMMARY



With the micro flyer BNF revolution now in full swing, its nice to know that Horizon Hobby have not been pulling punches across their product range. With a total flying weight of 1.1oz, the Blade mCX2 is a very enjoyable helicopter to fly. Overall the feeling you get while flying the mCX2 is one of confidence and that of being connected with the helicopter.

So which one should you get? If you have a DSM2 transmitter that you can use, you could choose the BNF version but I would personally recommend the RTF version as it does not cost a lot more and it also gives you the MLP4DSM transmitter that you wont be afraid to hand to the neighbors kid. With optional parts like the [glow in the dark blades](#), [carbon fiber tail boom](#), and [150mAh battery](#), the mCX2 is sure to entertain for hours. The new full body fuselage, stronger motors and the flying lights make the Blade mCX2 a helicopter that will be enjoyed by novice to expert alike.

