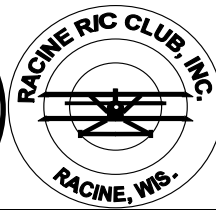




THE FLIGHTLINE



AMA CLUB 668 SINCE 1968
RACINE RADIO CONTROL CLUB INC SINCE 1968

RRCC August Issue
August 20, 2023 Newsletter

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Note:

Since there was no RRCC meeting in July (RRCC Club Picnic), there are no minutes to report for this month.

FLOAT FLY AT BONG AUG 12, 2023

RRCC OPEN HOUSE AUG 27, 2023

Dennys Stuff

Propeller RPM Information

All of our RRCC members have been using model airplanes with one of those propellers up front, (for some of us) many decades!

We all know that changing the propeller pitch, propeller diameter, or propeller RPM can have a very major effect on the power input to the prop.

It turns out there is a specific formula in determining power input to a propeller, given the prop diameter, pitch and RPM. This formula even works fairly well when it is used on full scale airplane propellers.

Making a change on the propeller on a Gas engine can either bog down the engine, or allow it to over-rev. On an electric model, what would seem to be a minor change in the propeller can easily change the power input to the propeller from where the model won't get off the ground, to severely overloading the motor, to the point of the motor leaving a smoke trail in the air.

The power input to the propeller uses only those three variables, Prop Diameter, Prop Pitch, and Prop RPM.

Here is the formula:

$$HP = Dia^4 * Pitch^2 * RPM^3 / 1.4E17$$

(You need a scientific calculator for this formula. That 1.4E17 is 1.4 with 17 zeros after it.)

I put this formula into an excel spreadsheet that I keep on my Cellphone.

Some explanation here. The Dia^4 is the same as $Dia \times Dia \times Dia \times Dia$. Same for the Pitch and RPM.

For the same Pitch and Diameter, raising the RPM by 15% increases the Horsepower input by $1.15 \times 1.15 \times 1.15$. That 15% increase in prop RPM represents a power input of 50% more Horsepower.

So, if your engine is putting out 2 Horsepower at 6000 RPM, it is putting out 3 Horsepower at 6900 RPM.

Same for the prop diameter. At the same 6000 RPM and prop pitch, going from a 19 Inch diameter prop to a 20 inch Prop requires 23% more horsepower. And, going from a 30 cc Gasser 19 inch prop to a 22 inch 50 cc Gasser requires nearly double the horsepower input.

So, many have seen my Escapade electric model that saw its first flights in 2015. For me, I've been running most of my models with those A123 battery packs. Yes, they weigh some 35% more than a similar LiPo battery pack, but for me, with no fire hazard, no storage voltage worries, they do OK.

That electric Escapade has been running on a 10S2P 5000 Mah A123 battery pack since 2015, up to this year anyhow. During the past winter, I upgraded the Esca-

pade battery pack from 10 Series to 11 Series cells.

That changes the battery voltage from 30 Volts at 72 Amps to 33 Volts at 84 Amps. That's 2100 Watts to 2800 Watts, or a 1/3 more horsepower input to the motor propeller.

As a reference, the 2100 Watts equals 2.8 Horsepower, the 2800 Watts equals 3.75 Horsepower.

Going from a 10 Series Cells A123 battery pack to a 11 Series Cells of the A123 battery pack resulted in a 33% increase in horsepower input to the prop.

And, now I'm happy with how this 8 year old Escapade takes off, and performs in the air.

FYI, as a comparison, a common 30 cc DLE gasser engine puts out around 2100 Watts, or around 2.8 Horsepower.

My models have the Spektrum AR8360T receivers with built in Gyro and Altitude indication. On one flight a few weeks ago, I let the model climb out straight up until it got hard to see. On landing, the Spektrum nX10 showed that the Escapade hit 634 feet altitude, straight up.

The RRCC club house wind anemometer.

The new anemometer has been operational now for a few weeks, and has been working fairly well.

Many thanks to Hoss for the ladder work on installing the outside Anemometer, along with relocating the Solar Panel that powers the unit.

The electronics uses 4 pages or 187 lines of code in its microcontroller. There has been one minor issue with the unit that

has to do with the morning powering up of the Anemometer via the solar panel that has been moved to face South.

The problem shows up when daylight first arrives. The Solar Panel slowly builds up Voltage from Zero Volts to a maximum 20 Volts at full daylight.

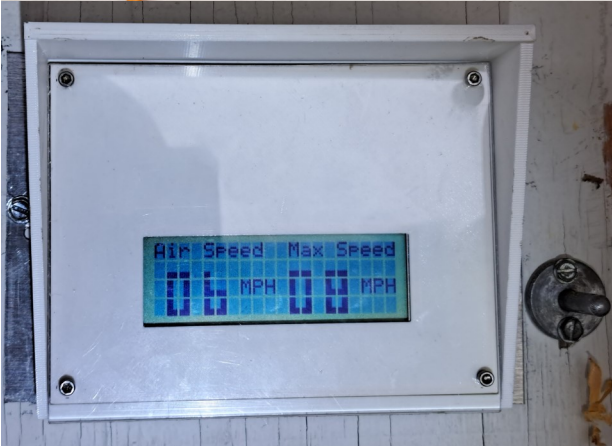
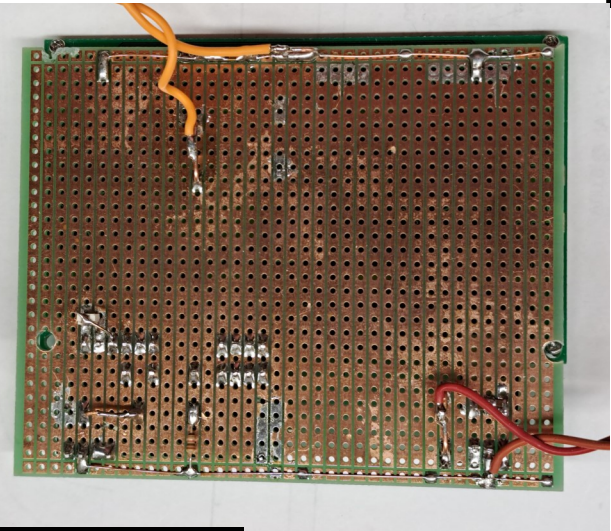
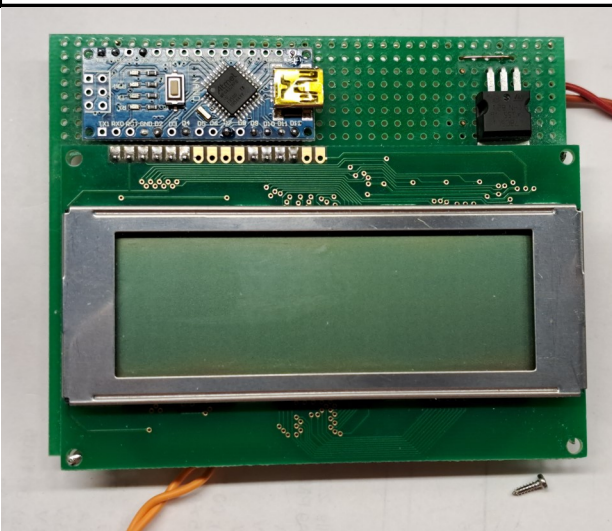
There are two MicroControllers in the air-speed monitor located inside the shelter. One Microcontroller measures the RPM of the outside Anemometer and converts it to a digital format that the LCD display uses. The LCD display MicroController takes the digital signal from the RPM MicroController and lights up the LCD display. Problem here. On power up, the RPM MicroController initiates the LCD

MicroController. The RPM Micro powers up at 2 Volts DC, the LCD Micro powers up at 4.5 Volts DC.

So, at dawn, the RPM MicroController powers up first, leaving the LCD MicroController not initiated. That results in bars across the LCD display.

I could fix it with a software delay that reboots the LCD display an hour after dawn. ***But, its much easier to just manually shut off the LCD display and turn it back on!*** That initiates the LCD, and zero's the maximum Air Speed.

(FYI, your Editor donated all of the parts for the LCD display portion of the Anemometer, along with 3D printing the case.)



These are a few photos of the inside and outside portions of the RRCC field Anemometer. Note the relocated Solar Panel now on the roof of the club house. There is no battery backup on the display. It is entirely powered by the solar panel.



More on the Spektrum nX10 transmitter.

Several of the RRCC membership have purchased the Spektrum nX10 or other nX series of transmitters.

This transmitter power on button works like the power on and power off buttons of your cellphones.

To turn on the nX10 transmitter, hold down the power button until you see the LCD display light up. To power down the nX10 transmitter, push and hold the power button for four seconds, until the LCD display closes out.

There must have been a few complaints on this mode of power on/power off operation. Horizon Hobbies has a software update on the Spektrum nX series of transmitters that includes changing the power up/power down modes of operation.

For the update, go to the same website (spektrumrc.com) and log in. Locate the appropriate Spektrum download for your model of transmitter. Copy that file to an SD card, and install the card into your transmitter. Next, turn on the transmitter.

The software upgrade is completely automatic.

Just make certain that your SD card does not have an existing software update file in it. If it does, the new upgrade won't work. (Delete the old one)

Also note that the SD card MUST be 32Gb or less. 64Gb and higher SD cards do not work.

If your Spektrum update still does not work, give me a call. You may need to re-format your SD card with a different file formatting process.

Now, with the current version of the nX10 software, you have two options of how to shut down the transmitter.

The default mode is as it was, ie hold the power button down for four seconds.

The new shut down mode is changed via the systems command. Press the xN10 power button for a half second or so. The LCD screen asks if you want to shut it down. Use the roller bar, roll it, and press the roller bar. Shut down is immediate.

DennyV RRCC editor

JIM'S CORNER

As I write this article for the newsletter, we are having some nice weather. Take advantage of it! Don't forget, winter is coming sooner than you think!

Our next club meeting is on Sunday, August 20th. At that meeting will be discussing our open house event taking place the following Sunday, August 27th. There is also the Sky Ranch picnic, which we are invited to on Saturday, August 26th.

As of yet, we have not heard anything from the AMA concerning our application for a FRIA (FAA – Recognized Identification Areas), so that we don't have to fly with transponders in our planes. The

way things have been going, the implementation date will probably just be moved back.

As a point of interest, has anyone else noted the problems with Tower Hobbies/ Horizon Hobbies on line site? They claim they are having problems with a computer upgrade, but it sure is making it tough to deal with them. Oh well!

Hopefully you can make the meeting on the 20th & the Open House on the 27th. We need a lot of airplanes flying then.

Fly Safe & Have Fun
Jim Litwin
President





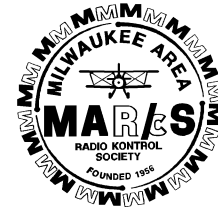
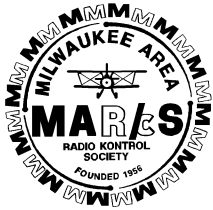
THE JULY 2023 RRCC CLUB PICNIC!

FLOAT FUN FLY

23TH ANNUAL

**AUGUST 12, 2023 FROM 9 am to 4 pm (13TH, SUNDAY is RAIN DAY)
BONG STATE RECREATION AREA-KANSASVILLE, WI.**

Sponsored by MILWAUKEE AREA RADIO KONTROL SOCIETY



FLYING- CAMPING-PICNICKING
Bring family, friends, food and FLOATS

Enjoy the outdoors in a beautiful State Recreation Area
where swimming, hiking, camping and
a host of other activities are Available.

**BIG PLANES, small planes, Boats lots of Room
and lots of shallow water with easy Access.**

**Flying available Saturday or (Rain day) Sunday
STARTING TIME 9am To 4 pm**

DONATION \$5.00!

ENTER BONG STATE RECREATION AREA

From Hwy 142, ½ mile west of Hwy 75.

A Wisconsin State Park Sticker is required (daily or annual) and can obtained at the entrance or in advance.

2009 Wisconsin State Park Sticker:

All fees are per vehicle not per person , it pays to car pool!

Tell the attendant you are going to the M.A.R.K.S. club FLOAT FUN FLY.

**REFRESHMENTS B.Y.O. (BRING YOUR OWN) FOOD
CAMPING RESERVATION SHOULD BE MADE EARLY**

For additional information call

Roger Nickolaus cell 414-405-8004 (RBNCARS@SBCGLOBAL.NET)

For weather info the day of event call Roger Nickolaus 414-405-8004

South East Wisconsin RC Club Events

(This schedule came from the RC Association)

Date	Club	Event
1 * Sat Apr 8	Model Engine Collector's Association (MECA)	Collecto and Hobby Swap Meet
2 * Sat Jun 3	Circle Masters Flying Club at Sussex Village Park	Control Line Open Fun Fly
3 Sat Jun 10	Fond Du Lac Aeromodelers Association	Open Fun-Fly
4 * Sat Jun 24 (rain date Sun Jun 25)	Sky Ranch Flyers	Fun Fly
5 * Sat Jul 8	Bong Eagles	Old Timer Contest
6 * Sun Jul 9	Flying Electrons	Scale Event
7 July 16	Racine RC Club	Club-Only Picnic
8 * Sat Jul 15 (rain date Sun Jul 16)	Astrowings of Wisconsin	Charity Fun Fly
9 * Sat Jul 22 (rain date Sun Jul 23)	Southeastern Wisconsin Area Rotory Modelers (SWARM)	Friend Fly
10 * Sun Jul 23	Flying Electrons	Electric Fly In
11 * Mon Jul 24 to Sun Jul 29	Circle Masters Flying Club	EAA KidVenture - Oshkosh
12 * Sat Aug 5 (rain date Sun Aug 6)	Milwaukee Area Radio Control Society (MARKS)	Float Fly DNR Bong
13 * Sat Aug 5	Bong Eagles	All Free Flight Contest
14 * Sat Aug 5	Rubicon Area Flyers	Fun Fly
15 * Sun Aug 6	Circle Masters Flying Club	Annual Control Line Contest
16 * Sat Aug 12 (rain date Sun Aug 13)	Flying Electrons	Airfest, Fly-In Benefit Troop #110
17 * Thu Aug 17 - Sat Aug 19	Fond Du Lac Aeromodelers Association	Warbirds and Classics Over Midwest
18 * Sun Aug 20	Fond Du Lac Aeromodelers Association	Open Fun Fly
19 Sun Aug 20	Racine RC Club	Open House
20 * Sat Aug 26 * Sun Aug 27	Circle Masters Flying Club (might not fly on Aug 26 due to possible car show)	Demo Flying, Sussex Antique Farm Implement Show
21 * Sat Sep 9 (rain date Sun Sep 10)	Flying Electrons	Fly-In and Swap Meet
22 Sun Sep 10	Watertown Aeromodelers RC Club at Watertown Municipal Airport	Open house and pancake breakfast with flying demos
23 * Sat Sep 16 to Sun Sep 17	Flying Electrons	Pattern Contest
24 * Sat Sep 16 (rain date Sun Sep 17)	Rainbow Aero Modelers Society (RAMS) and Southeastern Wisconsin Area Rotory Modelers (SWARM)	Joint Club-Only Picnic
25 * Sat Oct 7	Model Engine Collector's Association (MECA)	Collecto and Hobby Swap Meet
26 * Fri Oct 20 to Sun Oct 22	all clubs invited to participate and promote (possibly at Discovery World)	Maker Faire

For EAA KidVenture, volunteers get free admission, good free parking, a T-shirt, and lunch for about 3 hours of time (with breaks if needed). Contact Chris Sterner.

Laurie will include club events and dates (excluding club-only events) on the Association's Facebook page. Each event will include a link to the club's web site.

Lakeland RC Club is hosting no event this year due to losing their field.

COMPOST SCHEDULE 2023

Date	Time	Name(1)	Name(2)	Substitute
08/09/23	12-2	Terry Peterson		
08/09/23	2-4	Wayne Greisen		
08/09/23	4-6	Douglas Karge	Roman Kirykowicz	Helmut Schmidtke
08/16/23	12-2	Matthew Holl		
08/16/23	2-4	Matthew Holl		
08/16/23	4-6	Matthew Holl		
08/23/23	12-2	Terry Peterson		
08/23/23	2-4	Wayne Greisen		
08/23/23	4-6	Chris Stein		
08/30/23	12-2	Chris Stein		
08/30/23	2-4	Wayne Greisen		
08/30/23	4-6	Chris Stein		
09/06/23	12-2	Bob Johnson		
09/06/23	2-4	Bob Johnson		
09/06/23	4-6	Gary Bokowy		
09/13/23	12-2	Bob Johnson		
09/13/23	2-4	James Houtsinger		
09/13/23	4-6	Chuck Roberts		
09/20/23	12-2	Bill Flannery	Kenneth Dalton	
09/20/23	2-4	Bill Flannery	Kenneth Dalton	
09/20/23	4-6	Bill Flannery	Kenneth Dalton	
09/27/23	12-2	Jim Litwin		
09/27/23	2-4	Jim Litwin		
09/27/23	4-6	Jim Litwin		
10/04/23	12-2	Douglas Karge		
10/04/23	2-4	James Houtsinger		
10/04/23	4-6	Douglas Karge	Roman Kirykowicz	Helmut Schmidtke
10/11/23	12-2	James Martinich		
10/11/23	2-4	James Houtsinger	James Martinich	
10/11/23	4-6	James Martinich	Roman Kirykowicz	Helmut Schmidtke