



Bull Sheet

March 2024 Issue



Have Faith! The Warmliness is Coming!

Meeting Schedule

SNHRCC Meetings are held on the second MONDAY of each month.

Summer meetings (June, July, August, September) are held at our flying field. They're being at 7 pm during the summer to allow a time of flying while the members are all together.

Winter meetings (October - May) are being held at 7 pm in the Community Room of the Litchfield Fire Department, 10 Liberty Way, Litchfield, NH. Last page of this issue has a map of the parking.

The Bull Sheet is published by the Southern New Hampshire Radio Control Club (SNHRCC), Inc., a non-profit Academy of Model Aeronautics (AMA) Chartered Club #408, for the promotion of building and flying of Radio Controlled (RC) model aircraft.



When it comes to testing new aircraft or determining maximum performance, pilots like to talk about "pushing the envelope." They're talking about a two dimensional model: the bottom is zero altitude, the ground; the left is zero speed; the top is max altitude; and the right, maximum velocity, of course. So, the pilots are pushing that upper-right-hand corner of the envelope. What everybody tries not to dwell on is that that's where the postage gets canceled, too.

Admiral Rick Hunter, U.S. Navy.

**Next Meeting is March 11, 2024 at the Litchfield Fire Station Community Room
7:00 PM Sharp!**

A Message From The President

Greetings Folks!

Big things this month. On Tuesday, the town will vote on whether or not to approve a lease for a solar plan that would kick us off of Wagner field. We have been hard at work spreading our message. Maybe you have seen our signs out there!

We will also need volunteers to help at the polling stations on Tuesday. Please let us know if you can make it. It will be hugely helpful to the club.

If you talk to anybody in Hudson who will vote on it, here are our talking points:

1. Southern New Hampshire RC Club is a valuable community organization (we all know this one!)
2. The solar plan is a bad deal for the town. The solar company will sell the power it makes at the landfill back to the town for 11 cents per kWh, a discount from 13 cents per kWh. But right now the town pays 9.1 cents, and that's projected to go down. So the town will lose money!

Please spread the word, and please let us know if you can help out at the polls on Tuesday by responding to the link that John sent (non-residents can help too!). The future of this great flying field and club depends on it.

I also want to commend Taylor Collins for the excellent work he did on the bullsheets for his time here, but he will be stepping down due to some newer circumstances. Thank you so much Taylor. But, we will need a new newsletter editor. Please let us know if you'd like to help. Taylor and Ken have set the bar pretty high with how well they did, and you don't have to top it! We will give you all the help and support you need to do it.

In more cheery news, I am glad to see people's 1/2A train air projects coming together. I think John is ready to fly his? Bring them to the meeting!

See you MONDAY!



Cody

Club Officers

- President
Cody Wojcik
Fremont, NH
603.479.4514

- Vice President
Mark Auclair
Windham, NH
781.910.1241

- Secretary
John Hayes
Litchfield, NH
603.345.5604

- Treasurer
Ed van der Veen
Hudson, NH
603.247.3181

- Safety Officer
Brian Nadeau
603.566.6797

- Newsletter
Taylor Collins
505.301.2904

- Flight Instructors
John Hayes
603.345.5604



John

“Learning to fly an airplane taught me a way of thinking, an approach to problem-solving that was applicable and effective. Pilots are very methodical and meticulous, and artists tend not to be.”
— Chris Carter

**Southern NH Radio Control Club
Meeting Minutes
February 12th, 2024
Litchfield Fire Community Room**

Officers in attendance: Cody, Mark, Ed, and John

Secretary's and Treasurers reports were read and accepted.

Cody mentioned that we may want to consider Auto Renewal on the memberships, there was no discussion.

For those voting in Hudson, vote no on article 26 and vote yes on article 31.

Cody mentioned that two of the Selectmen are up for re-election. If Heidi Jackoby is elected as a selectman, it may help our cause.

A question was asked about the solar project whereas Bidens Green Initiative is billions in the hole.

There was a question about the financials of the power lease which was explained to the best of our knowledge as a bad deal.

Brian had set out to do another RTK, but Elvis provided the information freely.
Much discussion followed.

Taylor asked if the AMA could help.

John H said he had received a new Airspace Authorization from the FAA to cover the increased altitude that we fly to. John Clark mentioned that the Derry Club found an extra line that required the club contact to have a list of each member's FAA license number. John H said he would check to see if that is in the new agreement.

Making Sense of Electric Power...

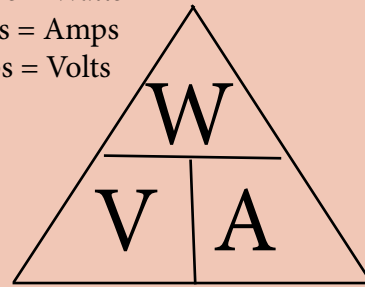
- Think of watts as “horsepower”
- Think of voltage as “pressure”
- Think of amperage (current) as flow rate

$$\text{Volts} \times \text{Amps} = \text{Watts}$$

$$\text{Watts} / \text{Volts} = \text{Amps}$$

$$\text{Watts} / \text{amps} = \text{Volts}$$

Cover the part of the triangle that is unknown and you will see the formula to calculate it



Guideline for Selecting Watts per Pound of Aircraft

- 50-70 watts per pound - This is the minimum level of power for decent performance ... good for lightly loaded slow flyer and park flyer models
- 70-90 watts per pound - Trainer and slow flying scale models
- 90 - 110 watts per pound - Sport aerobatic and fast flying scale models
- 110-130 watts per pound - Advanced aerobatic and high-speed models
- 130-150 watts per pound - lightly loaded 3D models and ducted fans
- 150- 200+ watts per pound - Unlimited performance 3D and aerobatic models

Volts, Amps, Watts

Volts and Amps are inversely related relative to Watts

- $10V \times 10A = 100 W$
- $100W / 10V = 10A$
- $100W / 20V = 5A$

More Volts requires less Prop (Less diameter, fewer blades, less pitch)

Real Life Example

7.5 pound plane @ 130 watts per pound

$130 \times 7.5 = 975$ watts required

$975 W / 20V = 48.75 A$

Props: Diameter and Pitch

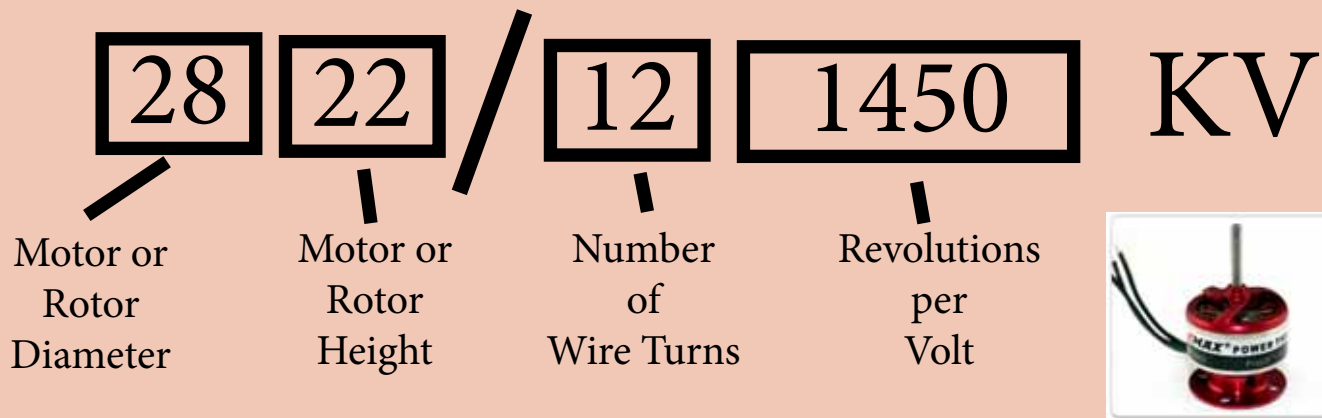
Amps Change with:

- Prop Diameter
- Prop Pitch
- Blade Count

Rule of Thumb Trade-offs

- 1 inch diameter for 1 degree of pitch
- 1 inch diameter for 1 blade
- 1 degree of pitch for 1 blade

Motor Designations



In this example, this 1450 KV motor should turn at 10.730 RPM (unloaded) on a 7.4 volt battery pack. (KV rating multiplied by voltage)

Battery “C” Rating

Example : A 2200 mah (milliamp hour) battery equals 2.2 amps.

If the battery claims a “C” rating of 40 to 50C, multiply that 40 - 50 by 2.2, to get an 88-100 Amp Discharge Rate

Then consider what is the max Amperage level of your ESC (Electronic Speed Controller?) Ideally, that rating *will be at least* 20% higher than your calculated max discharge rate.

What is the max Aperature draw of your motr/prop combination?

Putting It All Together

So here's a typical scenario....

You want to build a fairly zippy sport aerobatic plane. Nothing crazy, but something that won't put you to sleep when you fly it.

So... the complete airframe, motor, battery, servos, receiver, landing gear, and hardware weighs 4 pounds (64 ounces.)

From our Watts/Pound guideline chart, you pick 120 watts per pound. That's around 480 watts total.

You'd like to use a 3S battery pack, which is approximately 12 volts. So, 480 watts, divided by 12 volts equals 40 amps. To have a reasonable safety margin, you'll need at least a 60 amp ESC. One 2200 mah (Milliamp hour) pack will provide 2.2 amps for one hour. If you attempt to pull 40 amps, that's approximately 20 times that rate, so it will run for only 1/20 of one hour. That's three minutes. If you double the battery capacity by connecting two of the 2200 mah batteries in parallel, you can expect to get six minutes of run time (at full throttle).

A quick search of what's available turns up this Avian 4260 480 kv motor. That means it is 42mm in diameter, 60mm long, and will turn 480 RPMs per volt. So our 12 volt pack will turn it 5760 RPMs with the recommended 13 x 6 prop.



Avian 4260 480KV Motor



And here it today's submission for the "Oh My God" Department. Can you imagine the battery this monster requires?

The Reader's Digest Version of Membership Requirements for the SNHRCC

To be a member of the SNHRCC, and fly “legally” at Wagner Field there are a few requirements.



First, you must belong to the Academy of Model Aeronautics. AMA membership provides you (and the club) with liability insurance in the event of an accident. No AMA? No Fly!



Second, you must be a current member of SNHRCC. The club dues are based on a calendar year, and there is a membership renewal form in this newsletter. You can print it out, fill out the required information and mail it in to the Treasurer with a check.



In recent years, the FAA has gotten involved in our modeling lives. We're now required to register our “drones”, either for sport and recreation purposes, or with a Part 107 license (for commercial purposes) which requires a written test. You can complete the registration at www.faa.dronezone. There is a one-time \$5.00 fee, and the registration is good for 3 years. The FAA will issue you a registration number, which you can use for all of your models. The number is supposed to be displayed on each of your aircraft.



The AMA is an FAA approved Test Administrator of the The Recreational UAS Safety Test. The “test” is a set of slides explaining the knowledge base required, followed by a few “Keep doing it until you get it right” questions. It is quite simple if you watch the slides, and it is all common sense stuff. You will need to keep a copy of the certificate with you when flying.

**Complete These Four Items and You are
“Good To Go” for another year’s Flying!**

SOUTHERN NH RADIO CONTROL CLUB

2024 MEMBERSHIP APPLICATION

Name: _____

AMA# _____

Address: _____

City: _____ St: _____ Zip: _____

Field key# _____

Home Phone: _____

Cell Phone: _____

Email: _____

Normal Renewal Period
October Meeting Thru February Meeting

Fees (check all that apply)

Current members:

___ Adult - Normal Renewal Period 80.00

___ Junior 5.00

New Members (sponsorship required):

___ Adult 90.00

___ Junior 5.00

Sponsors Signature

Membership Agreement

I recognize a model airplane is NOT a toy, and must be operated at all times in a safe manner.

I agree not to hold the Southern New Hampshire Radio Control Club, Inc. and my instructor, if I am receiving instruction, responsible or liable in any way for injury, loss, or property damage I may suffer due to any reason, including but not limited to pilot error or mechanical failure.

I agree I will not fly at any SNHRCC field or event without an active instructor until I have been approved for solo flight.

I certify I have read the Academy of Model Aeronautics "National Model Aircraft Safety Code" and agree to abide by its terms and conditions at all times. **New prospective members must attend the monthly meeting to introduce themselves prior to the membership vote of acceptance.**

I understand that there is no dumping of any kind at the facility.

Signature

Parents signature (if under 18)

Payment Information

Cash or check #

Payment amount:

Payment date:

Make check payable to SNHRCC

Include a self-addressed, stamped envelope

Mail to:

SNHRCC
c/o Ed van der Veen
9 Newton Street
Hudson NH 03051

Proof of AMA

**Attach photocopy
of AMA
membership card**

NO AMA CARD = NO MEMBERSHIP CARD
NO MEMBERSHIP CARD = NO FLYING!



SNHRCG Winter Meeting Spot!

Our meeting spot is in the Community Room of the Litchfield Fire Dept. Please pay attention to the parking restrictions that are made to accommodate the Volunteer Firefighters on call. **Violators will be mocked until they move their vehicles.**