



The Official Publication of the Southern New Hampshire Radio Control Club, Inc.



John Marien's OV-10 Bronco

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July 2026

Next Meeting

July 13, 2026

Club meetings are held on the second Monday of each month.

Our regular monthly meeting will be held on July 13th at 7:00 PM in the Litchfield Middle School cafeteria. Please attend!

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

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From The President

Hey Folks!

I hope you are having a great summer and flying when you can and staying out of too much heat. This month, we have started looking into a couple more flying sites: an area near the transfer station in Salem as well as a piece of private property in Derry. We will have some more info at the meeting as well as an update on progress at the Litchfield Salmon release site.



See you Monday!

Cody

From The Secretary

Southern NH Radio Control Club Meeting Minutes June 8th, 2026 Litchfield Middle School

Officers in attendance: Cody, Mark, Ed and John

The Secretary's and Treasurer's report was read and accepted.

Cody reported on our interactions with the AMA regarding the Litchfield Fish Hatchery property, talking about the process moving forward.

Ken asked about access to the site, stating he was told there was no Trespassing allowed. John clarified where the access road was located.

AJ's has gone unresponsive to Cody's inquiries following our last meeting.

There was much discussion about FRSky radio protocol, citing various changes over the years leaving some confusion.

The remainder of the meeting was devoted to fun hobby related discussion and stories.



From The Editor

Lately I've been spending a lot of time in the workshop. Not because I'm making spectacular progress on any particular airplane, but because the workshop has become one of the few places where life slows down enough to hear yourself think.

The world seems to move at an ever-increasing pace. News arrives by the minute. Phones buzz. Email piles up. There are appointments to keep, bills to pay, and an endless stream of things competing for our attention. It's easy to spend an entire day reacting to events rather than actually doing anything meaningful.

Then I walk down to the shop. The moment I flip on the lights, the pace changes. The airplanes waiting on the bench don't care about politics, stock markets, deadlines, or headlines. They simply wait patiently for the next step. A piece of balsa needs sanding. A fiberglass seam needs trimming. A servo mount needs fitting. Small jobs, perhaps, but jobs that can be completed with my own hands. There is something deeply satisfying about that.

Many of us entered this hobby because we love airplanes, but I suspect we stay because we love the process. Building a model requires patience. It demands concentration. You can't rush a covering job or force a glue joint to dry faster. The airplane teaches you, over and over again, that progress happens one small step at a time. Oddly enough, that's a lesson that applies far beyond model aviation.

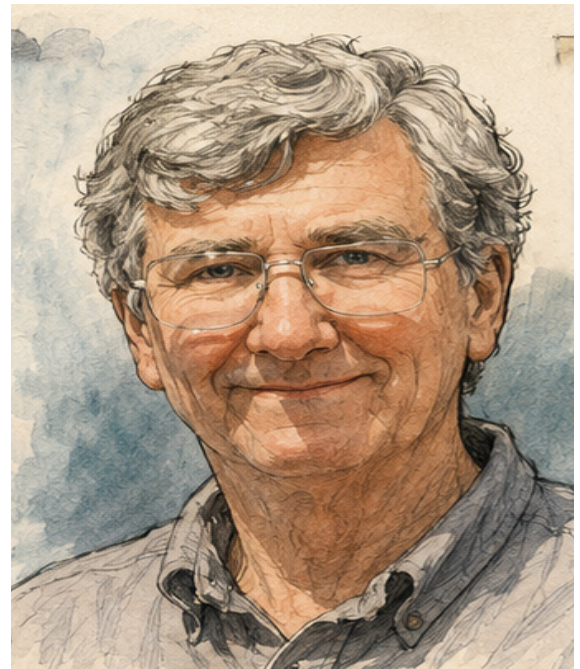
When I'm in the workshop, I find myself focusing less on everything that's wrong and more on what can be accomplished next. Instead of worrying about the entire project, I simply ask, "What's the next thing that needs doing?" More often than not, an hour later I've made real progress, even if it isn't dramatic.

The older I get, the more I appreciate that kind of progress. A finished model is certainly rewarding, but the real gift may be the time spent building it. The workshop provides a place where the noise of the world fades into the background. Problems become simpler. Thoughts become clearer. A person can spend an evening shaping wood, fitting parts, and solving small problems, and somehow emerge feeling better than when he walked in.

Perhaps that's why so many of us keep returning to our shops, even when we're not particularly motivated or inspired. We may tell ourselves we're going down there to work on an airplane. Sometimes that's true.

But I suspect that, every now and then, we're really going there to find a little peace and quiet.

And in today's world, that's not a bad reason at all.



What is the Kv rating of an electric motor?

By John Marien

WHAT IS Kv RATING?

Kv (constant velocity) is the no-load RPM a motor will spin per 1 volt applied.



$$Kv = \frac{\text{No-load RPM}}{\text{Voltage (V)}}$$

$$\text{RPM (no load)} = Kv \times \text{Voltage}$$

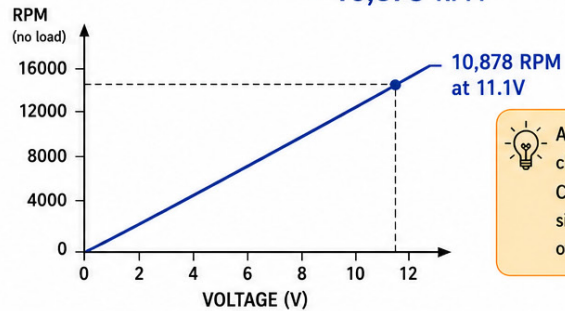
Knowing the Kv rating of a motor will help you determine how fast that motor will rotate when a given voltage is applied to it.

EXAMPLE:

Motor: 980Kv
Battery: 11.1V



$$\begin{aligned} \text{No-load RPM} \\ 980 \times 11.1 \\ = 10,878 \text{ RPM} \end{aligned}$$



MATCH Kv TO AIRCRAFT

HIGH Kv – FPV RACING AIRPLANE



High Kv motor
Small prop
= High RPM for high speed

LOW Kv – HEAVY-LIFT AIRPLANE

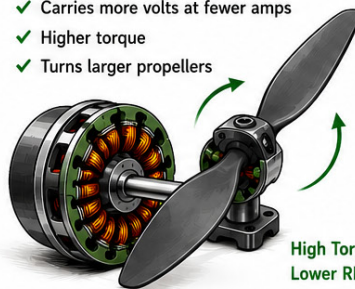


Low Kv motor
Large prop
= High torque to lift more

Kv, TORQUE & PROP SIZE

LOW Kv (Lower RPM per Volt)

- ✓ More winds (thinner wire)
- ✓ Carries more volts at fewer amps
- ✓ Higher torque
- ✓ Turns larger propellers



High Torque
Lower RPM

Best for: heavy-lift airplanes, scale aircraft, large props, longer flight time, efficiency

HIGH Kv (Higher RPM per Volt)

- ✓ Fewer winds (thicker wire)
- ✓ Carries more amps at fewer volts
- ✓ Lower torque
- ✓ Turns smaller propellers



High RPM
Lower Torque

Best for: FPV racing airplanes, aerobatic models, small props, high speed

Answer: “Kv” refers to the constant velocity of a motor (not to be confused with “kV,” the abbreviation for kilovolt). It is measured by the number of revolutions per minute (rpm) that a motor turns when 1V (one volt) is applied with no load attached to that motor. The Kv rating of a brushless motor is the ratio of the motor’s unloaded rpm to the peak voltage on the wires connected to the coils.

Knowing the Kv rating of a motor will help you determine how fast that motor will rotate when a given voltage is applied to it. For example, a 980Kv motor powered by an 11.1V battery would spin at 10,878 rpm (980×11.1) with no load. A change in voltage will change the rpm and will require changing the propeller to avoid overloading the motor. Kv allows you to get a handle on the torque that can be expected from a particular motor.

Torque is determined by the number of winds on the armature and the strength of the magnets. A low Kv motor has more winds of thinner wire—it will carry more volts at fewer amps, produce higher torque, and swing a bigger prop. A high Kv motor has fewer winds of thicker wire that carry more amps at fewer volts and spin a smaller prop at high revolutions.

Knowing the Kv rating of a motor is helpful to determine which motor belongs in which aircraft. An FPV racing quad, for example, requires high rpm for high speed, so you would use a high Kv motor and a small-diameter prop. On the other hand, you would use a lower Kv motor in a heavy-lift multirotor because you want to turn a large prop at lower rpm and obtain high torque.



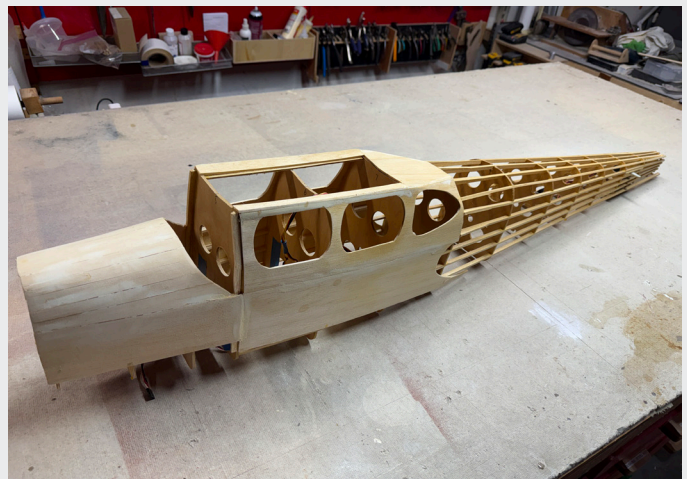
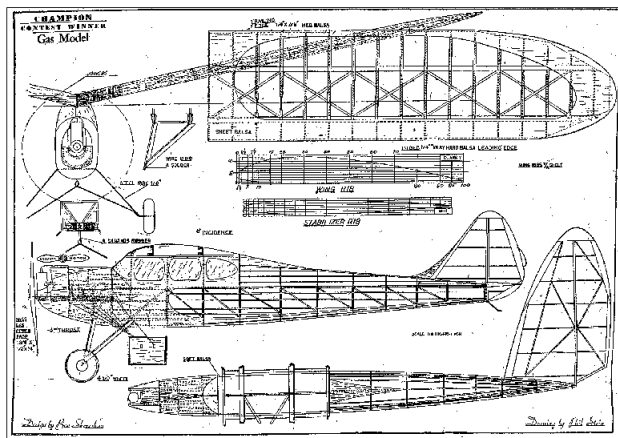
Submit Your Photos - Earn One Ticket per Issue!

Share what you're building!

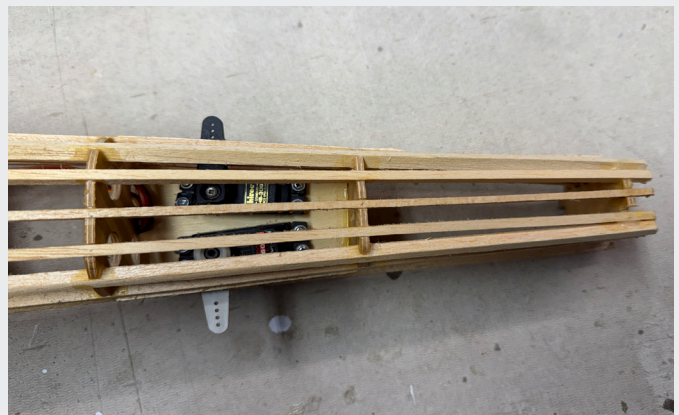
Send a photo and a short description of the model, repair, restoration, or project currently on your workbench. Each member who submits material for the "On the Bench" page will receive one entry ticket for our year-end drawing. One ticket per member per issue. At the Christmas meeting, one ticket will be drawn and the winner will receive a \$100 prize. Whether you're framing up a new model, covering a wing, restoring an old favorite, or just getting started, we'd love to see what you're working on! E-mail your contributions to taylor@soaringstuff.com

This is going to be an on-going section of the Bullshead. E-mail some photos and description of what you are working on, whether it is a kit build, a scratch build, assembling an ARF, or even a repair. Along with your entry, please send a vote for whether you would like a gift certificate from the hobby shop, an Amazon Gift Certificate, or a cash prize. Here's a sample entry from your Editor. (This one will not count towards the drawing... I don't want to be accused of "stuffing the ballot box").

From Taylor Collins' Workbench



This is an "alternate" project. I'm still grinding away on the Heithecker Challenger sailplane, but in the meantime, I've been scratch-building this Ben Shereshaw Champion. It's an old timer free-flight, but with modern lines. I plan to add ailerons, and it should make a nice, every day sport flying plane. I've built the rudder and elevator servos into the structure. I hope that is not a decision I will regret. This has been one of my first adventures in converting a PDF plan into CNC code, for cutting on my CNC router.



First Flights of an OV-10 Bronco

by John Marien



"At 35 pounds, this plane flies like a Train-Air."

I have been building, fixing, aligning, and replacing parts on this 20cc-sized 84" Hangar-9 OV-10 Bronco for many months now. Finally, it was ready for its first flights, but the weather did not cooperate as did my schedule. I waited 6 weeks for the combination of my availability and perfect weather in New England and fussed over the balance of the airplane.

At first, because it is 35-lbs. I used three identical scales under the wheels and measured everything twice and came up with the initial balance point.

But then I had a nagging thought: The landing gear was retractable and the gear was down. But is the CG measurement in the instructions with the gear up or down? Dang, it was with the gear up. So, my balancing using the scales was off. I rebuilt my sling harness to hang the airplane and measure the balance point that way. As it turns out, the

balance with the gear up or down is very close to each other and both are within the tolerances of the CG range.

But now I knew for certain the CG was correct. And then I waited.... Sunday the 28th of June the stars and planets aligned and off to Concord to the Skyhawks field for the maiden flight. Only Steve McCormack was at the field with his family and he rode by my side for the first flight and is responsible for the in-flight pictures.

During last year's flying season, I proved the ESC, Motor, Prop, and battery combination was solid and I used that times 2 for the Bronco. The take off roll was started slowly and as it gained speed, I increased the throttle till I was nearly at full throttle and still the plane was glued to the grass... Not knowing how sensitive the control surfaces were going to be, I was in low-rates. This was not going to work as I pulled back on the stick to full deflection and the plane barely was



climbing. Then I switched to mid-rates and the climb was good but I was holding back stick pressure to keep it level and not diving.

Steve responded to my request to dial in some up trim and all was good. Several passes around the field to the cheers of the small crowd and then I decided to retract the landing gear. All went smoothly and the Bronco was as tame as a Train-Air. High-rates for a roll, then a loop, then a few more 10-ft-high passes.

At about 6 minutes I decided to make a landing approach and I set up as normal and the plane came in high; it did not want to settle. Of course, I elected intentionally to land without using the four flaps but unintentionally with the gear still retracted. But that is what the test approach was meant for. With the gear down I headed in for another landing attempt but would have landed past mid-field and I did not know how far the roll-out would be. So, power up and go around for another attempt but still too high for me.

The fourth attempt I went deep to the south and brought her in the long way and made a perfect 3-point landing. Since it was a first flight, that was it for the day. I had some mixes to add and to check everything to ensure something didn't come loose or break. I added elevator to flap mix on a 7-point curve, coupled the rudders to the ailerons at 30%, added a touch of down elevator to idle throttle to help it settle

and I shift the RX batteries from in front of the CG to aft of the CG to reduce some of the elevator trim.

The next day, I was back at Concord and the weather was holding nicely. Prepped for flight and a good takeoff roll and she was airborne and climbing due to the extra elevator trim from the day before. I dialed that out. Nice flying level, good roll response, enough power to go vertical forever, in fact I think Cody could hover this plane.

A snap roll and a spin and recovery and time for another landing. A regular approach was all I needed and it settled into a landing posture quite nicely, for a main gear touch-down followed by the nose gear. Another flight showed that there was still plenty of power left to spare and all seemed well enough for the day with another nice landing. At 35-lbs this plane flies like a Train-Air and you do not feel the weight.

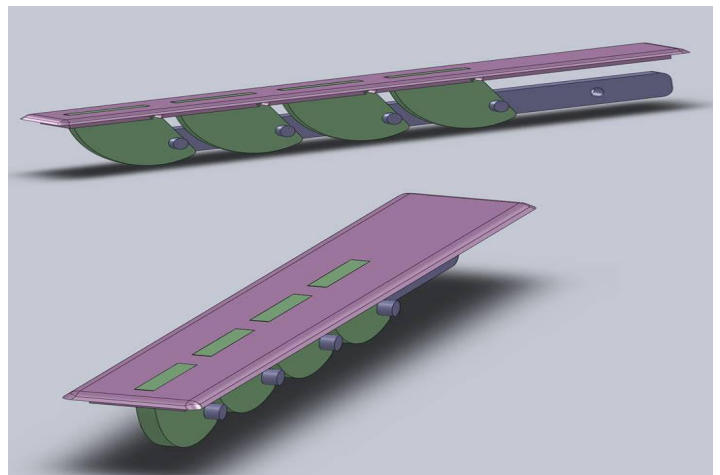
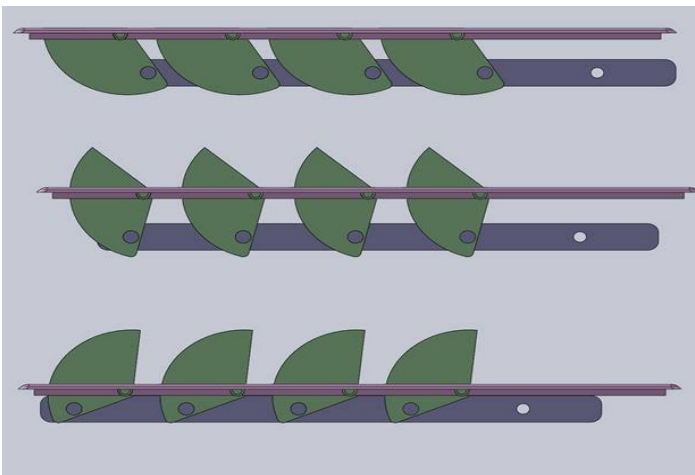
I could cruise around at 1/4-throttle, I could go to full flaps with just a touch of down happening (which I corrected), it rolls well, and has more than enough power to get the job done. Each 8-minute flight used ~3,000 mAh from each of the power batteries and they are rated at 10,000 mAh each and are (2) 4S packs in series, one set per side, for 6.5-lbs of batteries. I have telemetry coming from the plane which tells me how many mAh I've used from each flight pack and I have an automatic warning alarm if I cross 5,000 mAh just to be safe.

The propellers are 18x8 Xoar and they are a matched/balanced set with one rotating CW and the other CCW. I saw no need to reduce throttle on one motor when using the rudder to turn since the turns were smooth and graceful enough. At some point I may dial it back to 6S per motor and see if I like how it flies although that will shift the CG aft.

The full size OV-10 Bronco has four 1/4-circle spoilers that rotate out of the top of the wing to help it dump lift on tight field landings. So, with some successful flights in the logbook, I started working on the CAD drawings for the spoilers. I'm not certain how effective they will be but they roughly match the size of the spoilers on the full-size OV-10. Below are several renderings of the spoilers from fully closed, half deployed, fully deployed, and then some perspective views. This arrangement allows me to use a single servo, or linear arm, to drive the four spoilers per side. It is intended to have an opening in the top of the wing cut out and this slips in and contacts the top surface of the wing tips. Then, it is just running the servo's signal/power/ground feed through my wiring connector and up to the RX. What is missing is the servo tray on the right side. I can build this and fully test it before installation. For now, I love the way it flies. Remember, this is a scale warbird and not an IMAC-style airplane and I don't expect it to torque roll or do a lomcevak. But it could hover with the right pilot. And in the air, it looks like the real thing...



CAL FIRE uses the OV-10 as an Air Tactical / Air Attack platform. Rather than dropping retardant, the aircraft acts as the "eyes in the sky," coordinating tankers, helicopters, and ground resources over a fire. CAL FIRE acquired its Broncos in the early 1990s to replace the Cessna O-2 fleet.



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RC ACES

North Hampton, NH

Auction

Saturday, Sept 12TH



Dig out your RC planes and gear out from under the bed, out of the garage, and out of the closet for our RC Auction!

- ★ Food, Soda and Water available for purchase
- ★ 50/50 Raffle
- ★ Admission: \$3.00
- ★ Setup and viewing @ 9:00 am
- ★ Auction starts @ 10:30 am

- ➔ Bring a table to sell your small items (\$20 donation/table)
- ➔ Items priced at \$100 (+) must go through auction
- ➔ Auction sales commission: 10% - \$20 max per item
- ➔ Please no side deals
- ➔ Come to buy - sell or just watch

HOME OF THE RC ACES
Hobbs-Martin Field

The field is accessed from behind Joe's Meat Shop at 229 Atlantic Ave (Rt. 111). Look for the access road entrance on right side of parking lot across from fuel storage tanks. Follow the unpaved access road that runs along the west side of the new Rail Trail north for about 400 yards.

Watch our website www.rcaces.org for announcement of "Rain Date" activation or auction cancellation/rescheduling



www.rcaces.org
Club Contact: Don Chase
dhchase@comcast.net

What Happened to the Cox .049? | The Engine That Couldn't Survive Modern Childhood

John Hayes found a very well produced video online, about the history of the L.M. Cox Manufacturing Company, whose Babe Bee .049 engines (and many others) had a profound effect on all of our childhoods. Here's the link to that video... Just click on it!

Watch the Cox .049 Video - Click Here!

Your Editor had the privilege of getting a tour of the Cox factory, in Santa Ana, California, back in the mid-1970's. Besides the sight of their amazing screw machines, spitting out very precisely machined engine parts like popcorn, was another very interesting cultural phenomenon. The tiny glow heads that we all remember, had microscopic platinum coils of wire in the center of the head. Those coils were wound by an amazing automated machine, and dumped into cereal bowls. They told me that one bowl of such coils held several thousand dollars worth of platinum. But what was truly amazing was the crew of skilled Chinese women, who meticulously grabbed one coil at a time, positioned it, and spot welded into place in the tiny recess in the top of the cylinder head. Those Chinese ladies were the only people they could find who had the visual acuity to do the job.



Those amazing Chinese ladies at Cox Manufacturing spent all day pulling tiny little platinum coils out of a bowl with tiny tweezers, and then holding them in place in the opening in the glow head, and spot welding them into place.

For reference, that is a single grain of rice in the photo.... the penny looks huge by comparison.



The Recreational UAS Safety Test (TRUST)



<https://www.youtube.com/watch?v=ZklBwvy6gZc>

This video explains the TRUST Test REQUIREMENT.

<https://trust.modelaircraft.org/>

This is the Course/test site.

ABOUT THIS TRAINING

WELCOME TO THE RECREATIONAL UAS SAFETY TEST (TRUST)

The Academy of Model Aeronautics is an **FAA-approved Test Administrator of The Recreational UAS Safety Test** (TRUST).

TRUST is a collaboration between the FAA and industry to provide TRUST and educational safety material to Recreational Flyers.

Recreational flyers can access the TRUST here by clicking START below!

Upon completion of the test recreational flyers should print or save a digital copy of their completion certificate and keep it on their person when they fly. The Academy of Model Aeronautics cannot re-issue your completion certificate if it is lost. The FAA cannot re-issue your completion certificate. Should you lose your completion certificate, you will need to re-take TRUST and obtain a new certificate.



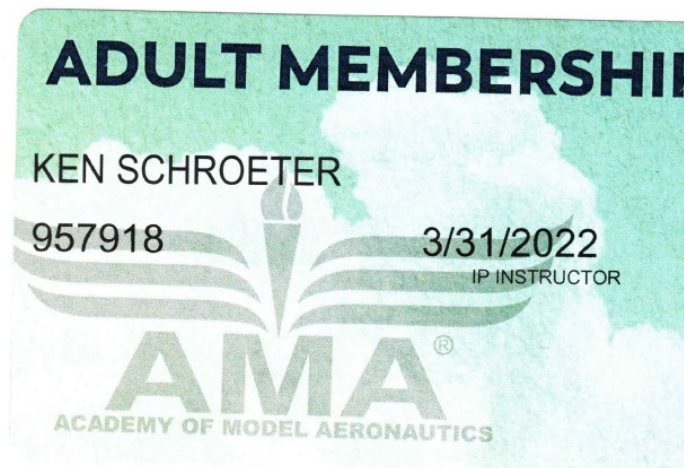
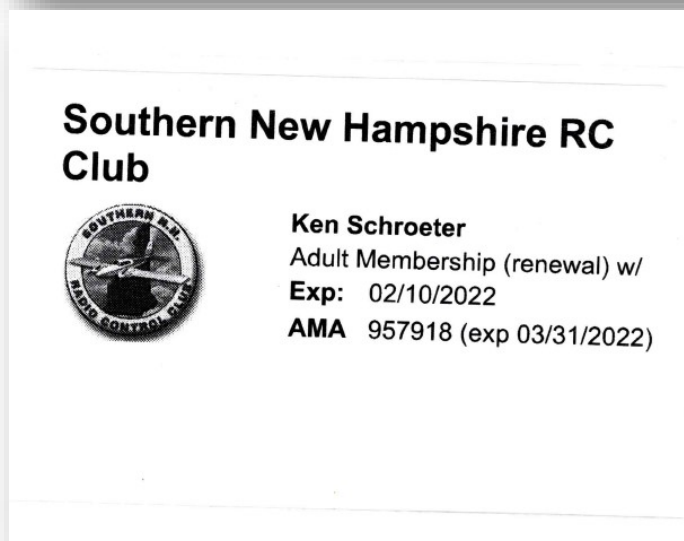
NOTAM

This is a requirement of the AMA and FAA, so please take the few minutes to take the course. 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 that is the actual test. Its quite simple if you watch the slides. You will need to keep a copy of the certificate with you when flying. Once and done forever.

No whining,

REQUIRED FLIGHT DOCUMENTS

These are the required documents to fly at an AMA Chartered Field.
For the FAA you technically only need your FAA Number where it can be seen on your aircraft in plain view (i.e. not inside). I keep them in my radio box.



1. FAA Drone Registration Number/Card
2. TRUST Certificate
3. Current Club Card
4. Current AMA

Southern New Hampshire Radio Control Club Membership Application 2026

Name: _____
 Address: _____
 City: _____ St: _____ Zip: _____
 Home Phone: _____
 Cell Phone: _____
 Email: _____

AMA#
 Field key#

Normal Renewal Period
 October Meeting Thru February Meeting

Fees (check all that apply)

<p>Current members:</p> <p><input type="checkbox"/> Adult - Normal Renewal Period 80.00</p> <p><input type="checkbox"/> Junior 5.00</p>	<p>New Members (sponsorship required):</p> <p><input type="checkbox"/> Adult 90.00</p> <p><input type="checkbox"/> Junior 5.00</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Sponsors Signature</p>
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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
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Proof of AMA

Attach photocopy
 of AMA
 membership card

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