



July 2009

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July 14 Notified Meeting Results

On July 14, the Wingbusters MAC had a Notified Meeting to discuss and potentially change seven bylaw issues. 34 members were in attendance and that later became 35 with a late-arriving member arrived after the fifth Motion was voted upon. A 2/3 majority (i.e., 23 votes minimum) was needed for any Motion to pass.

Of the seven issues brought before the membership, five were passed. Below is a synopsis of those votes as taken from the Secretary's Minutes.

1. Motion to impose a one-year probationary period on new members per AMA recommendation. Yeas=19, Nays=15. Motion failed.
2. Motion to change the age of a Junior member from 19 to 17. Motion failed.
3. Article VI, Paragraph 2; Motion to use email to notify members of all mandatory notifications whenever possible while non-Internet users would still receive notices via US Mail. This would save in well over \$100 in Postage and Printing costs, per notice. Yeas=24, Nays=10. Motion passed.
4. Article IX, paragraph 7; Motion requiring all Club checks over \$250 be signed by both the Treasurer and the President. Yeas=34, Nays=0. Motion passed.
5. Motion to require that all Executive Board electoral candidates have a minimum of three consecutive years of membership in order to be eligible to serve on the Executive Committee; Yeas=34, Nays=0. Motion passed.
6. Motion to more specifically define a guest of the Club, and to define his visits (as a pilot) to the field as 3 occasions in total, not including Sanctioned event. Yeas=31, Nays=4. Motion passed.
7. Motion to specify that there is no maximum membership limit to the Club, but does permit the EC to place a hold on all new membership applications under extreme circumstances (such as receiving an overwhelming flood of new applications in a short period of time) until a Notified Meeting can be called to discuss this with the Membership. This would empower the membership to discuss and decide the best course of action. Yeas=26, Nays=9. Motion passed.

Thanks to all who attended the meeting and gave your input. It was a great meeting, with more attendees than we've seen in a long time.

Vandalism and Locks

By now, you've all heard the details about the recent vandalism at the field. There's nothing more that we can add at this time. When any further news comes to light, we'll send the information out to you. Many thanks to the Wingbusters Lawn and Garden Company for all the hours you put in over the weekend to bring the Field back. We still have a way to go, but you gave it a great head start.

For this reason, it's more important than ever to ensure that the gate is locked when you're the last one leaving the Field. Sure, if someone has an SUV they can drive around, but there's no sense in making things easy for them.

There's always that 1%

Every group has that 1% who wonders why the world is out of step with them, and Wingbusters is no different. Someone in a Mensa T-Shirt threw a damaged LiPo into the fields trash can. Would the remaining 99% of you please enlighten him as to why this usually isn't high on the list of "smartest things to do today"?

Your fellow Club members volunteers take away the trash for your convenience (I'm one of 'em), and it'd be a comfort to know that there isn't a potential for fire in the back of his/my pickup or trunk. If someone is good enough to handle the Field trash, the least that can be done is to ensure that it doesn't pose a hazard. Tossing a damaged LiPo pack in the trash is just plain wrong. That action can't be defended. To that 1% we ask, please be more considerate.

To recap, disposal is easy. Whenever possible, discharge the battery as best you can (but don't short it out; perhaps discharge it by running it in a motor). Then, fill a bucket with water and add a lot of salt (Morton Salt is cheap). Dunk your battery in the solution outside and let it set for several hours to a couple of days. Then, when the foaming stops, toss the battery into your household trash. Thanks for understanding. Or better yet, take it to your local Home Improvement Store who will dispose of it (regardless of its origin) and recycle the metals. Thanks!



Sometimes Things DO Change

[This letter to Ken Willard was included as part of the Engine Clinic column in the October 1970 issue of RCM. Look how far we've progressed! Turbines have evolved from wishful thinking to 140K RPM powerhouses. And, remember those RCM covers?? That was 'how many' years ago???]

Dear Mr. Willard: Why has no one yet come out with a reliable and efficient model turbojet engine? It would open up a whole new field of modeling. Just think of it! A scale U.S. Navy Phantom Jet that was really a jet; no ducted fans, no props.

It seems, on the surface anyway, that it would be relatively easy to machine a small engine of this type employing a centrifugal flow compressor with an axial flow turbine. And if more power were needed, maybe even a small after burner could be designed into the engine. Yours Sincerely, Carl Fox, III

Dear Carl, Thanks for your letter, However, it more properly should have been sent to Clarence Lee, our RCM engine expert. So, I'm sending it to him along with a copy of this letter, for his opinions, which may or may not agree with mine.

The way that I see it, the true turbojet, when scaled down to a size satisfactory for our use, just doesn't put out the necessary thrust. They have been brought down in size enough to be used in some target drones, but the weight is still up in the 40-60 class. Seems that it has something to do with the mass flow requirements. For example, in your model plane, the prop turns at anything from 10,000 to 17,000 rpm, to get the thrust required, as compared to prop speeds of 2200-3400 in full scale jobs. Turbojet fans rotate at speeds around 25,000 - 35,000 in full scale and would have to hit 75,000 - 100,000 in a little job. And the friction buildup just can't be overcome using our present technology. Best Regards, Ken Willard.

Thank You, Paul Ehney

Paul Ehney is stepping down from the daily chores of grass mowing and Field Maintenance. We all agree that Paul has done a tremendous job keeping the field in great shape. Some health issues have come up and Paul is trying to follow a Doctors orders, so another crew has stepped up to fill Paul's shoes. Thanks, Paul!

We'd also like to thank Kevin King, Jim Kimball, and Mark Sampson for stepping up to the plate to take over the duties... If you'd like to help, contact Kevin at the Field and discuss your schedule.

Lost in the Woods (er, corn)

[Stop me if I've already printed this before, OK?] I was at another club once, and as I pulled up, a friend came over and said that another flyer had gone into the woods to fetch his errant plane, but that was over an hour ago. My buddy was physically unable to go search himself, and with the lag in time, he was worried so he asked me to head in, which I did.

As you can guess, just as I was headed into the woods in one spot, that guy came out in another. I just remember having visions of the worst happening to him, and I didn't want to be the one to stumble across it. I looked for about a half hour before I found out that the other guy was OK.

This is being typed in July as we watch the corn growing around the Field again. So dust off your corn horns and think about this for a moment.

If you have to head in to tall corn to fetch a plane, trade cell phone numbers with someone at the field, or agree on some other type of communication. That way, if your buddy gets concerned, he can call you... And, if you happen to fall and bust an ankle (or worse), he can help you out. Just a thought.

Clevises: A Note To The Unwary

By Pete Young,

[as printed in the CRRC Flight- Log and reprinted in the AMA Insider, Sept 2003]

Last summer I lost elevator control of an Almost-Ready to Fly (ARF) trainer. The airplane stopped responding normally to elevator commands, and pitch control eventually disappeared entirely. I wasn't able to return the airplane to the flying field, and it ended up in the big swamp where it stayed for several months before anyone found it.

The root cause of this mishap was that the elevator's nylon clevis had stripped out and thus, all elevator control was lost. The airplane was on its third flying season, by the way. So, one lesson is to replace nylon clevises with metal ones, especially on elevators, which see extremely high air loads.

This past week I was flying a new ARF trainer. I had replaced the kit's plastic clevises with metal ones. On its first flight, the airplane started requiring more and more nose-up trim, the reverse of how a gas airplane acts as it burns fuel. An alarm went off in my head, triggered by memories of last summer's incident. I immediately chopped throttle and landed after less than two minutes of flight time.

On final approach, the airplane started pitching over more and more, despite my holding full back stick and back trim. Although I thought for a moment the airplane was going to dive straight in, I was able to bring the nose up sufficiently to make a hard landing with minimal damage – a sheared off landing gear plate. I was lucky the aircraft wasn't totaled.

The cause of this incident was the DuBro metal clevis had stripped the threads off the kit's threaded rod linkage, a variation of last summer's problem. I recalled that I had forced the DuBro clevis on, but as I had done this in the past with no problems noted, I didn't think anything of it.

It turns out that most ARF trainers these days have 2-millimeter threaded rod linkages and matching plastic clevises. If you replace the plastic clevis with DuBro or Sullivan metal clevises, you'll have a mismatch between the metal clevises' 2-56 threads and the kits 2-millimeter threaded rods. By the way, metal 2-millimeter clevises aren't a common hobby shop item. Common ones are either 2-56 or 4-40.

The remedies are easy. You can solder on a 2-56 (or 4-40) threaded rod using silver solder and solder couplers (not electrical solder!). If you don't like to solder, you can replace the 2-millimeter linkage stock completely. Simply replacing the original plastic clevis with a metal one isn't a good solution.

Improving poorly controlled, dangerous takeoffs

[By Jim Devine, from *TRAC News*, Tampa Radio-Control Aircraft Club, Tampa FL]

How often have you seen an airplane that is taking off to the east roll off toward the pilot stations? Usually the pilot gives the engine more gas and, using the ailerons, yanks the airplane back to the right. Occasionally, the airplane continues to the left, clears the safety barriers, and head for the people in the pits and the cars just beyond.

If you have poorly controlled, potentially dangerous takeoffs, try practicing control of your aircraft on the runway. First, check the wheels and make sure they have a little toe-in. Also, the wheels should not continue to spin when given a flick. To create friction and avoid free-wheeling, slip a 3/16-inch long piece of fuel line on the axle and push the retainer collar in tight. With proper adjustment, the wheels will turn only if you push them with your finger. This braking action allows for a high idle speed without the airplane moving, which reduces the chance of the engine dying when the idle is too low. This also helps stop an airplane that might otherwise roll off the end of a runway during landing.

Pick a day when the wind is light and the runway isn't being used. Practice taxiing back and forth the length of the runway, using the rudder for control. Stay within a few feet of the yellow center line. When you have mastered taxiing at slow speed, click the throttle up another notch or two and keep practicing. With enough practice and a slow, smooth application of power, you can approach takeoff speed while moving down the center of the runway. You also can practice aborting the flight by shutting off fuel when you're about to lose directional control of the plane.

With this improved directional control and practice at aborting a poorly controlled airplane, your takeoffs will be much safer and a pleasure to watch.

WHOI To Use RC to photograph the Arctic

From toy to research tool



WHOI [Woods Hole Oceanographic Institute] engineer John Bailey spent the last year building, modifying, and testing [a model plane dedicated to science research](#). Sometime this fall, Bailey and fellow engineer Hanumant Singh will launch it from the deck of an icebreaker to capture images of Arctic Ocean ice floes. Read more about their work in *Oceanus Magazine*. For more info, go to

<http://www.whoi.edu/oceanus/viewArticle.do?id=58146§ionid=1000>

Hints & Tips

From the September 2003 issue of AMA National Newsletter

Nylon Bolts

If you've ever had trouble getting nylon bolts started when attaching the wing or other major subassembly, try this. Bevel the threaded end of the bolt so it tends to be self-centering when you're trying to get it started. The easiest way to bevel the bolts is to stick them into a school kit handheld pencil sharpeners and twist. [from *The Flypaper*, South Bend RC Club, South Bend, IN]

Repairing Loose Firewalls

There are many times that you have to repair a loose firewall or tail section on an airplane. Maybe it's not completely out, just loose, and you need to reinforce the joint. One of the best ways to make sure you have a good joint is to heat the epoxy with a heat gun after it is applied. This will almost liquefy the epoxy and let it seep into the joint to ensure a solid repair. I also recommend using triangle stock to reinforce the joint, particularly on firewalls. One warning though – be sure you do this with a long-working resin. The heat will speed up the reaction. If you are using five-minute epoxy, it may set up before you can finish your work. [from *Mission Briefing*, Magic Valley Air Force, Jackson, TN]

Installing Landing Gear

When installing landing gear onto the fuselage with plastic or nylon bolts, place a thin 1/16" thick sheet of light plywood or balsa between the aluminum gear and the bottom of the fuse. This way, if you land hard and shear the plastic screws, you have a better chance of getting a grip on a section of the broken plastic for easier removal. [from *Airmailer*, Benton County Radio Control Club, Corvallis OR]

Vinegar

To remove epoxy from yourself safely, use white vinegar. It's smelly, safe, and very cheap

Flexible Sanding Block

A flexible sanding block can be made by contact cementing sandpaper to one side of a urethane sponge. Your sanding block can conform to any curve. [from *Prop Spinner Chatter*, Eugene Prop Spinners, Eugene OR]

Handy Soldering Jig

Here's an easy way to solder a threaded coupler. Place the coupler in the jaw of a wire stripper and stretch a rubber band around the handle. This provides the needed tension to hold the coupler in place while soldering. [from *The Pilot's Log*, Fort Worth Thunderbirds R/C Club, Fort Worth, TX]

Propeller Speed Chart

Tip speed in MPH

RPM	Propeller Diameter in Inches								
	10	11	12	13	14	15	16	17	18
6000	178.5	196.3	214.2	232.0	249.9	267.7	285.6	303.4	321.3
6500	193.4	212.7	232.0	251.4	270.7	290.1	309.4	328.7	348.1
7000	208.2	229.1	249.9	270.7	291.5	312.4	333.2	354.0	374.8
7500	223.1	245.4	267.7	290.1	312.4	334.7	357.0	379.3	401.6
8000	238.0	261.8	285.6	309.4	333.2	357.0	380.8	404.6	428.4
8500	252.9	278.2	303.4	328.7	354.0	379.3	404.6	429.9	455.2
9000	267.8	294.5	321.3	348.1	374.8	401.6	428.4	455.2	481.9
9500	282.6	310.9	339.1	367.4	395.7	423.9	452.2	480.5	508.7
10000	297.5	327.2	357.0	386.7	416.5	446.2	476.0	505.7	535.5
10500	312.4	343.6	374.8	406.1	437.3	468.6	499.8	531.0	562.3
11000	327.2	360.0	392.7	425.4	458.1	490.9	523.6	556.3	589.0
11500	342.1	376.3	410.5	444.8	479.0	513.2	547.4	581.6	615.8
12000	357.0	392.7	428.4	464.1	499.8	535.5	571.2	606.9	642.6
12500	371.9	409.1	446.2	483.4	520.6	557.8	595.0	632.2	669.4
13000	386.7	425.4	464.1	502.8	541.4	580.1	618.8	657.5	696.1
13500	401.6	441.8	481.9	522.1	562.3	602.4	642.6	682.8	722.9
14000	416.5	458.1	499.8	541.4	583.1	624.7	666.4	708.0	749.7
14500	431.4	474.5	517.6	560.8	603.9	647.1	690.2	733.3	776.5
15000	446.2	490.9	535.5	580.1	624.7	669.4	714.0	758.6	803.2
15500	461.1	507.2	553.3	599.5	645.6	691.7	737.8	783.9	830.0
16000	476.0	523.6	571.2	618.8	666.4	714.0	761.6	809.2	856.8

Courtesy of Servo Chatter, Anoka County RCC, Coon Rapids MN, as reprinted in the January 2005 AMA National Newsletter

- Lowest noise and best efficiency is in the 350-380 MPH range (Green area)
- Higher noise and loss of efficiency begin at 400 MPH tip speeds
- Great loss of efficiency occurs at tip speeds of over 500 MPH
- Prop tip speed = $[(3.14159) * (\text{Dia}) * (\text{RPM})] / 1056$
- 1056 is a constant to convert inches/minute into MPH

If you have any questions or comments (or, God forbid, even suggestions ☺) for the newsletter, please forward them to me at the email below.



Courtesy: RCM Magazine, December 1996

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Newsletter comments:

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Until next time,
Bob

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