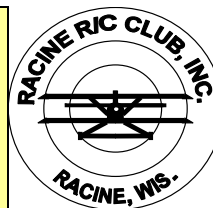




THE FLIGHTLINE



AMA CLUB 668

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April 2009 Issue

Next Meeting April 19, 2009 at 6PM Mt Pl Village Hall

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MINUTES OF MARCH 15TH MEETING

President Jim Litwin opened the meeting with a welcome to visitors, and a new member, Nick Graceffa. Minutes of the last meeting were accepted as published in the Newsletter.

REPORTS:

PRESIDENT: Jim Litwin reported that the combination on all the locks at the field was changed on March 1st. This 4 digit tumbler combinations listed on the back of your membership card. On February 21st Jim attended a meeting of the Milwaukee Association of R-C Clubs.

Results of the Waukesha Auction were discussed and our club was also presented with a check in recognition of the volunteers who worked at the Waukesha Auction in January.

(The Milwaukee Association of R-C Clubs will also support the improvement of club fields by paying a portion of any expense incurred while purchasing materials/labor for a project.)

Jim spoke to the Village representative responsible for the compost site operation. He thanked them for keeping the road open to the field during the winter months. They are well satisfied with our oversight of the compost site during the composting season. (The compost site is open to the public starting Wednesday April 15th.) The road to the compost site, and our field, may be graded, but more permanent resurfacing will not be done this year.

Vice-President Jerry Rose and Bruce Rowland are absent because both have had surgical procedures. We look forward to their rapid recovery and seeing them at the field again.

Awards that were given out at the banquet were:

Golden Propeller.....Bruce Rowland
Rygasewicz Award.....Ron Dixon
Craftsmanship Award.....Curt Sommerfeld
Sportsmanship Award.....Steve Holly
Instructor Award.....Ron Dixon

SECRETARY/TREASURER: Bill Dollase reported on the club finances. At this time, we have a paid membership of 54 for 2009.

SAFETY OFFICER: Jerry Armantrout said that with a new flying sea-

son ahead we should pay close attention to safety procedures on the ground and safe flying conduct in the air. Post your membership card in the proper areas of the frequency board - fixed frequency or Spectrum models. (It is important that your transmitter type be obvious to others even if it can't shoot anyone down because of its "Spectrum" nature.)

FIELD CHAIRMAN: Randy Ruddell was absent but President Jim Litwin commented that there is a lot of flying already. Our fence will need re-placement this year as it is bleached by the sun, sags and is broken in some places. Right now it is obvious that there are big and small "holes" on the field which will have to be filled and then the entire field needs rolling before it dries out.

NEWSLETTER EDITOR: Dennis Vollrath handed out hardcopies to members and pointed out that if you change your e-mail address and don't let either the editor or the club secretary know, you will no longer receive your Newsletter. It is important to keep the club current on e-mail address, phone numbers, street addresses, etc.

TRACTOR CHAIRMAN: Eric Armantrout said all our field maintenance equipment is checked out and ready to go.

COMPOST SITE DIRECTOR: Bruce Rowand was not present but Jim Litwin noted that on April 15th our compost "year" begins and Bruce will assign slots to those members who haven't already signed up to fulfill this requirement for club membership.

OLD BUSINESS: None

NEW BUSINESS: Marquette Engineering students will be participating in a contest in April to see which model airplane can carry the most weight. At the February meeting of the Milwaukee Association of R-C Clubs, a request was made for information to help in designing and assembling such a plane.

SHOW & TELL: Larry Danko showed a Hanger 9 PIPER 2025, an ag. plane. It has an 80" Wing span. 8-1/2 lbs. 82 engine.

Terry Weber had a Great Planes Extra 300 kit, with a 60 engine in it. The finishing of the plane was the hardest part of the construction. Hard to match colors to one another.

Roger Olson brought one of the jets that he owns. This particular model is remarkable in the detail of its accessories such as a working Pitot tube, shock absorbing landing gear and a turbine that will send it straight up, out of sight. The transmitter used to fly this plane is computer controlled and in itself is a study in versatility. Roger says the instruction book for the transmitter is a rather thick document.

Ron Dixon brought a two cylinder, in line ZDZ engine. It will be installed in a Staudaker with a 96 inch wingspan. Biggest problem? Cooling the rear cylinder. Baffling is required, and the baffle doesn't come with the engine. (Ron says, "no baffle, no rear cylinder".) The engine fires every 180 deg. And sounds great.

Dennis Vollrath displayed several old radios, including an old early 1960's era 27 Mhz Citizenship Single channel radio system, with just a single push button for control of the model. After 45 years, this transmitter/receiver still works.

The radio cost as much in real dollars as a modern Spektrum radio, and the receiver came in a box of parts. This receiver had to be built up and assembled and soldered up by the modeler! We've come a long way.

Our next meeting, on April 19th will still be held at the Village Hall. 6 PM.

Secretary/Treasurer
Bill Dollase

For Sale
Hanger 9 P-47 Thunderbolt 60 ARF new in box
\$230.00, see Larry Danko 262-598-8533

***** **RCReport is on Line <http://www.rcreport.net>** *****

JIM'S CORNER

Spring is starting to pop out! There is more flying taking place at the field, and we have already had one new pilot qualify. The field is looking better all the time, and we have not yet done any cleanup activity! It looks like the frost leaving the ground actually makes the field look better.

We have not yet set a shelter tear down date or a field clean up date, but we should have that info in the next Newsletter.

At our last meeting it was evident that some planes were being built over this past winter. Hopefully we will see more new planes at the field when the flying season gets into full swing.

I can't emphasize enough the importance of checking out your plane and radio system before coming to the field intending to do your first flight of the season. A crash because of some small equipment failure is not what we want to see. Double check the battery systems, control systems, motor mounts, etc. If you feel a little rusty, ask someone else you have confidence in to stand beside you on that first flight to help trim the plane or give some advise. Don't be too proud to ask for some precautionary help!

Our next meeting is on Sunday, April 19th at 6:00 PM at the Mt. Pleasant Village Hall. This is our last meeting at the Village Hall until next fall.

Jim Litwin President

Dennys Stuff

So far in this series, we've talked about volts, amps, resistance, watts and a few other things. And photos were shown of the types of electronic meters that can be used to measure these electrical characteristics.

What we will need is a MultiMeter for the following article. Everyone sells them, from Radio Shack, to Farm and Fleet, to Menards, even Wal-Mart!

These meters are very similar in operation, and have most of the same dials or something similar.

I picked up a good basic MultiMeter from Wal-Mart today to use as an example for this series. It's a Etrex # 10709, and sells for just under \$20, tax included. It runs on standard AAA batteries, so cost to run it will be reasonable. Take a look at it:



Take a look at the “Yellow” areas of the rotary switch on this meter. This is a flag that these ranges require proper connections to your meter. Example, trying to measure voltage on a 5 cell NiCad pack when the meter is set to the “10 A” range will damage the meter. We will cover this next issue.

DC VOLTAGE MEASUREMENTS

Lets start by first plugging in the meter test leads, then turn the meter on. Turn the rotary switch to about “9:00 AM” where it shows “2” in the area where the meter range shows $-V$ with a funny little wave under it. Note the pushbutton “AC” and “DC” at the lower left side of the meters display. This pushbutton should be “out” setting the meter to measure DC voltage. Next, touch the multimeters leads to a 1.5 volt penlight alkaline battery cell. The meter shows 1.602 volts DC which is a good value for a new alkaline battery cell.

Note that the meters red wire should connect to the “+” connection of the battery and the meters black wire should connect to the “-” connection of the meter.

Now, reverse the connections to the battery. You will find that the meter measures the same exact voltage, only it has a “-” in front of the voltage, indicating you've got the wires backwards. No, it won't burn anything up. It's showing the “minus” to let you know you've got the red/black wires backwards.

FYI, these alkaline batteries pretty much follow a curve, where the lower the battery voltage, the less capacity it has left. 0.8 VDC for an alkaline battery is pretty much dead.

Now, connect this same MultiMeter to a 9 volt battery. If it



shows just the number “1”, it indicates you've over ranged the meter, that's still set on its 2 volt range. Simply set the meter to its 20 DCV (Direct Current Voltage) range, and retest. Again, a new 9 volt battery will show over 9.0 VDC. That's a quick check on your battery operated fire alarm's that you should have in your house.

If you've got a A123 pack, these batteries will measure about 3.6 VDC per cell, so a two cell battery pack will measure 7.2 Volts DC. Incidentally, if you should accidentally connect a battery to the meter when its set to an AC voltage range, it won't work. On this meter, it just shows zero volts when connected to a battery.

If you are at the field, and are wondering about your glow plug battery, a meter like this will make it possible to perform a quick check on your glow plug battery.

This meter is cheap enough to keep one in your field box. In fact, you can connect it across your engine starter battery when you hit the starter to see just how much the voltage drop is, when starting one of your engines. If your battery drops much below 10 volts DC or so, your battery is rather small.

A good lead acid battery will measure about 12.5 VDC fully charged, and that voltage drops off linearly to about 12 VDC when the battery is complete discharged. Note that this battery voltage will increase while the battery is being charged. Typical battery voltages in your automobile will be about 13.7 to 14.5 Volts DC while the engine is running.

That voltage will vary, because the alternator charges at different voltages depending on the temperature outside. If you ever wonder if your alternator is working in your car, this is a quick check.

Now, lets move on to this meters AC Voltage ranges. Just what is "AC Voltage"? Kind of hard to explain, but AC Voltage stands for Alternating Voltage. Which is why you may be familiar with the term "Alternator" in your car, or a stand by generator that puts out Alternating voltage.

Why use AC Voltage??? Turns out it's a fundamental property of electricity, where it is very difficult to change the voltage of a DC supply to another voltage, especially if you need any real amounts of power. A transformer will not work!

On the other hand, changing voltage in an Alternating Voltage system requires just a transformer, something you see in your back yard that sends the 120/240 VAC power to your home.

Now, if you push the "AC" "DC" button, when its depressed, the meter is now set to measure AC voltage.

If any readers ever do any wiring changes in your house, it's nice to know that when you've turned off the breaker, that the wires you are playing with are actually dead.

Now, be aware that you are playing with 120 VAC, and getting your self across it can stand your hair on end. Or worse.

But, if you set your meter to its 200 VAC range, and touch one lead to a mechanical ground, such as the conduit box, and touch the other lead to the black wire, it will measure 120 VAC if the circuit is live, and zero if its dead. You will also measure 120 VAC between the black and white wire, if it's "hot".

If your breaker is off, note that the meter might measure 5 or 10 volts or some strange value. This is "stray voltage". Its being picked up by your meter, that is sensitive enough to detect it.

This meter has an interesting feature, as shown below:

The electronics field has had something called a "Thermal Couple" that has been around for probably 100 years.



These thermal couples were used to measure temperature over a rather wide range of well below zero, to 1800 degrees F. This is a little thing that consists of two dissimilar pieces of wire, that's welded together at its tip. That's the tip shown just to the left of the MultiMeter. Now, with modern day electronics, you can use one of these thermocouples to measure temperature. The thermocouple included with the Etek meter is rated to a maximum temperature of 785 degrees F. Its accurate to about 3% or so, quite sufficient for our needs.

For those who run gasoline engines, this is a very handy way to measure cylinder head temperatures to make certain you've got enough cooling on your engine. **Or, stick it into place on the rear cylinder of a twin to check it.** Just prop it in between the cylinder fins with a piece of balsa or something.

Next newsletter issue, we will cover the meters "resistance" and 'current" ranges.

Speaking of resistance, that is a fundamental characteristic of electricity, where just about every electric conductor, such as copper, aluminum has "resistance" to the flow of electricity.

This even applies to your NiCad or NiMh battery packs you use for your radios. These four or five cell battery packs have something called internal resistance, which determines just how good this battery is under load conditions. Some of these penlight sized rechargeable batteries have ratings as high as 2700 Milliampere Hours, or even higher. They get these high capacity Milliampere Hour ratings by

making their internal battery plates extremely thin, causing an increase in internal resistance. That will result in problems with voltage regulation in the larger models with the big servos.

Big Gasser Models

Imagine that your newsletter editor has lost it, and is going to build up and fly a 1/4 scale 25 pound model with a gasoline engine and the works.

The question, what would he use for receiver battery power? (This is one persons opinion, you may or may not agree with it.)

First, we just mentioned that the penlight sized NiCad's should NEVER be used on these big gasser models. Think about your engine starter that you used on your 45 and 60 sized models, with the little battery that powered your starter. Usually worked fine. But, take that same starter, and try to start a big gasser with it. You might find that the starter won't turn it over, because your battery can't deliver enough power to your starter to turn over the engine.

Same thing, when you use penlight sized NiCad's on a big gasser model with high current drain digital servos, That's a bad combination.

Well, what choices do we have? We have LiPo batteries, we have A123 batteries, we have NiCad batteries, we have NiMh (Nickel-Hydride) cells.

LiPo Batteries

In my imaginary big gasser, In my opinion, LiPo batteries have absolutely NO PLACE for receiver power. **Period.**

These batteries are very light for their power capacity, and do well in electric models. But many modelers are becoming aware of their severe shortcomings as far as how long they last in the real world. If you accidentally leave the receiver switch on for a week or two, these batteries will fail. You may not know it until you crash. And, they can fail with very little outward evidence that something is wrong.

They also require a voltage regulator to drop their voltage down to an acceptable level for your receiver and servos.

These LiPo batteries must be carefully balanced each time you recharge them. You must remove them from the model while recharging because of the fire hazard. FYI, a fire from one of these LiPo battery packs will put one of Rogers Jet engines to shame.

A123 cells

These batteries are about 1/2 the weight of an equivalent NiCad/NiMh pack. They will far outperform the NiCad/NiMh packs as far as voltage under

very high loads. Many modelers are using these A123 cells directly into the receiver and servos without problems. But, just about every radio manufacturer indicates that this is not a good idea.

But, these A123 cells have only been around for about 3 years, so they have a rather short track record. They require a special charger for your pack or packs. These chargers can recharge these A123 cells rather quickly, but the special charger is a problem if you've got a number of these A123 cells.

These A123 cells do work well as receiver batteries, **IF** you are aware of what is required to use them, such as charging, voltage regulation, balancing and so on.

What does this leave us?

NiCad/NiMh batteries

The NiCad batteries have been around for near 50 years. They have a very proven track record for name brand battery cells.

Now, you should be using the "Sub C" sized NiCad batteries for these larger gasser models. These batteries are used all over the place from your battery operated drills, hedge cutters, electric knives, you name it. These cells do wear out over the years, but this is a slow process. Weak cells are easily found if you periodically run discharge tests on them at least once per year.

But, these cells are heavy. They weigh twice what the equivalent A123 cells will weigh. So, a pair of A123 cells will weigh in at about 5.2 ounces, for a total of 10.4 ounces for a dual battery system. Five of the Sub C NiCad batteries will weigh in at about 11 ounces, for a total of 22 ounces for a dual battery system.

That indicates that your model will gain about 11 ounces of weight when using NiCad's vs. A123 cells. In a 25 pound model, an extra 11 ounces would scarcely be noticeable.

Bottom line, my imaginary big gasser would use dual NiCad or NiMh primary/secondary battery packs for the receiver.

But, now we are finding that the NiCad packs are being taken over by something called Nickel Hydride (NiMh) cells. What's the difference between the NiMh and NiCad batteries?

Performance wise, not much. If you are fast charging them, they will run a little warmer than a NiCad after a charge. But, these cells can run really hot before you need to worry.

I was running Radio Shack's NiMh cells in my Electrostreak where the cells got up to about 135 degrees F after a flight. These cells lasted two years of flying, and still work. That 135 degrees will be very uncomfortable to pick up without burning your self.

GREENFIELD NEWS & HOBBY

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A pair of Showtime Models

At the Field 03-15-09

Racine RC Club 2009 Calendar of Events

JANUARY

1 Thu 9:00 AM - Flying Field - "First Flight of the Year"
18 Sun 6:00 PM Mtg – Village Hall

FEBRUARY

15 Sun 6:00 PM Mtg – Village Hall

MARCH

1 Sun Change Combination locks at field
7 Sat Club Awards Banquet – Charcoal Grill, Washington Ave, Racine
15 Sun 6:00 PM Mtg – Village Hall

APRIL

19 Sun 6:00 PM Mtg – Village Hall

MAY

17 Sun 1:00 PM Mtg – Flying Field

JUNE

1 Mon Winter Shelter disassembled by this date
14 Sun 1:00 PM Mtg – Flying Field

JULY

12 Sun 9:00 AM – Club Fun Fly
26 Sun 11:00 AM – Club Picnic

AUGUST

16 Sun 1:00 PM Mtg – Flying Field

SEPTEMBER

20 Sun 1:00 PM Mtg – Flying Field

OCTOBER

1 Thu Last day to submit Rule changes
1 Thu First Date that we can assemble the Winter Shelter
18 Sun 6:00 PM Mtg – Village Hall

NOVEMBER

15 Sun 6:00 PM Mtg – Village Hall – Vote on Rule Changes

DECEMBER

13 Sun 6:00 PM Mtg - Annual Mtg - Village Hall – Election of Officers

2009 Compost Schedule

	Noon to 2 PM	2 PM to 4 PM		Noon to 2 PM	2 PM to 4 PM
15-Apr	Bob Lupia Gerald Bublavy	Bob Lupia Gerald Bublavy	5-Aug	Dale Mosher Russ Zebell	Dale Mosher Russ Zebell
22-Apr	Gerald Jones Chris Gagnon	Gerald Jones Chris Gagnon	12-Aug	Dennis Vollrath Mike Millay	Mike Millay
29-Apr	Richard Gobeli Jerry Rose	Richard Gobeli Jerry Rose	19-Aug	Jim Engholt Terry Weber	Jim Engholt Terry Weber
6-May	Richard Cook John Czarnecki	John Merrill John Czarnecki	26-Aug	Ron Dixon GaryAnderson	Ron Dixon Eric Armantrout
13-May	Shel Berman Paul Willems	Jim Litwin Paul Willems	2-Sep	Jim Furby Keith Buska	Jim Furby Keith Buska
20-May	Shel Berman Bill Dollase	Jim Litwin Bill Dollase	9-Sep	Bob Leuck Don Parkinson	Bob Leuck Don Parkinson
27-May	David Czarnowski Richard Cook	David Czarnowski John Merrill	16-Sep	Bartz / Dixon	Bartz / Dixon
3-Jun	Merv Sommerfeld	Merv Sommerfeld Don Dalziel	23-Sep		
10-Jun	Buzz Parika Boyd Recknagel	Buzz Parika Boyd Recknagel	30-Sep	Steve Kozlik	
17-Jun	Jerry Armantrout Gary Anderson	Jerry Armantrout Eric Armantrout	7-Oct		
24-Jun	Larry Danko Randy Ruddell	Larry Danko Randy Rudell	14-Oct		
1-Jul	Roger Olsen Jim Strelitzer	Roger Olsen Jim Strelitzer	21-Oct	Steve Kozlik	
8-Jul	Curt Sommerfeld Dennis Volrath	Curt Sommerfeld Don Dalziel	28-Oct		
15-Jul	Jerry Clements Steve Holly	Jerry Clements Steve Holly	4-Nov		
22-Jul	Brian DelCampo Dick Delany	Brian DelCampo Dick Delany	11-Nov		
29-Jul	Mike Schoene Ralph Mohr	Mike Schoene Ralph Mohr	18-Nov		
			25-Nov		