THE
FLIGHTLINE

AMA CLUB 668 **SINCE 1968**

RACINE RADIO CONTROL CLUB INC

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March 2009 Issue

Next Meeting March 15, 2009 at 6PM Mt Pleasant Village Hall

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MINUTES OF THE FEBRUARY 2009 MEETING

President Jim Litwin opened the meeting at 6 P.M. and welcomed the members attending the meeting. The January minutes were accepted as published.

REPORTS:

PRESIDENT: Jim Litwin noted that sometimes the gate is open and sometimes it is closed. Reason: If there is a lot of snow, then leave the gate open for the Village to plow. If the roads are clear, then lock the gate. After March 1st the new gate code will be used to open the padlocks. (*this is also the "password" sometimes called for on the website)*. The new gate code is noted on the back of the 2009 membership card.

Bob Lupia reported that SuperTigre parts are now available from Tower Hobbies. (first go to http://TowerHobbies.com and then type "Supertigre" in the SEARCH BOX. There are pages of SuperTigre parts there.) It is important how you spell "Tigre" (not tiger).

VICE-PRESIDENT: Jerry Rose reminded the membership to sign-up for the March Banquet. Cost is $21 per person. Payment is made by a check made out to Jerry and sent to his home on Washington Ave.

SECRETARY/TREASURER: Bill Dollase reported on the club's financial state and noted that the club now has 45 members.

SAFETY OFFICER: Jerry Armantrout reported that the gravel placed around the shelter last fall provides safe footing for foot traffic this winter.

FIELD CHAIRMAN: Randy Ruddell said the field, this winter, is in good condition considering the season. However the matted grass reveals low spots here and there which will have to be filled when warm weather arrives. The fence is deteriorating and will have to be replaced this year. The wood pile is disappearing, but the shelter is being kept warm.

NEWSLETTER EDITOR: Dennis Vollrath said there was nothing new and everyone seems to be getting their newsletter without any problems.

TRACTOR CHAIRMAN: Eric Armantrout said all the equipment was there and in good shape.

COMPOST SITE DIRECTOR: Bruce Rowland has a computer problem. He said that the most up to date schedule is that available in the Newsletter. There aren't too many slots available anymore and Bruce should be contacted for an assignment if you still need one. The first part of the year has been pretty well assigned.

NEW BUSINESS: Members show up at the flying field even when conditions are not ideal for flying. It was suggested that a horseshoe pit be installed to provide activity when flying is not possible. No action was taken on this suggestion awaiting further comments from members.

SHOW & TELL: Dennis Vollrath showed a CAP 232 that he had constructed. Powered by a Hacker A40-10L brushless motor, and ten (5S2P) A123 cells. The power plant develops 7 lb. of thrust using a 16 x 12 prop, running at 6200 R.P.M. Dennis also showed a heat gun ordinarily used by crafts people where it is necessary to heat small glued areas in order to hasten a drying process. These specific use heat guns are can be very handy for covering models because of this ability to concentrate heat in small areas.

Jerry Rose showed his Balsa U.S.A. Northstar. He described the preparation of the fiberglass covering for the bottom of the plane. (Our club flys amphibians off the snow all winter. Both glow fuel and electric. Snow and ice are abrasive and have to be taken into account in take offs and landings, more so than water flying. Amphibians are the plane of choice for winter flying.) Black Baron Solar Tex was used for covering. The motor being mounted in the tail presented problems in C.G. location because the fuel tank is also in the tail. Jerry provided a hatch covered space in the nose so that weights can be easily added and subtracted when balancing the plane.

DRAWING: Won by Larry Danko

IN CLOSING: The combination of the padlocks at the field will have a new "code" after March 1st. Buy your banquet tickets, the banquet is being held March 7th, 6 PM at the Charcoal Grill. Our next meeting is on March 15th at the town hall.

A motion was made, seconded and passed to close the meeting.

JIM'S CORNER

We have made it thru the hardest part of winter, and with Daylight Saving Time now in effect, it seems like spring is something we can see in the near future.

For those of you, who have current 2009 membership, be aware that the combination code on the padlocks has been changed as of the first of the month. The new code is on the back of your membership card.

We are starting to seem completed or almost completed planes being shown at the club meetings, so if you have a plane you would like to share with us, bring it to our next meeting. Everyone likes to see the various projects that are being done, regardless of what stage they are in.

I met with the Director of the Mt. Pleasant Department of Public Works, and he indicated that they were quite happy with our performance this past year at the Compost Site. No car parts, or other major junk, no problems, and he agreed that the new unloading system of only doing it on the west side of the pile seems to be working better.

If you are interested in Club Jackets as described in the past Newsletters, call Steve Holly. We will have to see if there is enough interest to place an order.

Flying continues to take place at the field by some of our dedicated winter flyers, and the coffee talk is continuing to take place most every day at the shelter, so stop on out!

Jim Litwin
President

DENNYS STUFF

Last issue we covered just where all of this electricity stuff started, some 150 years ago. If someone from this time era were to be time traveled to the present 2009, they would likely be absolutely scared out of their mind!

We left off with discussions of people beginning to recognize that they could generate electricity by using different metals dumped into some sort of electrolyte. These investigations required some sort of a way to measure just what they had. Eventually, they created electrical terms to make it possible to measure just what these batteries could put out. Thus, the term Volts, Amperes, Ohms, and Watts were among the first terms that were used. As it turns out, these terms were pretty much named for the people of that era that defined these terms.

We've all ready covered what these terms are in my radio series several years ago. Just as a review, they are listed below. The main electronic terms are listed below:

Volts: Volts or voltage is the electrical "Pressure" behind any electric supply, be it a 1.5 Volt penlite battery, a 3.6 Volt A123 cell, a 12 Volt auto lead acid battery and similar. Note that these batteries are all DC, or Direct Current. Volts is similar to the water pressure in your house, measured in Pounds per Square Inch. Most everything in your house is AC or Alternating Current.

Amperes: Amps or Amperes is the RATE of electric flow, similar to water coming out of a garden hose in gallons per minute. Note that current flow in Amperes can also be DC

or AC current. If you look at the name plate of just about any electrical appliance, such as a toaster, or electric motor, the product will list its current requirements in AC Amperes. (Note, the term milliamperes is also often used, where a battery can be rated as 2300 Milliampere hours or 2.3 Ampere Hours. Abbreviations are MaHrs, and AmpHrs) Typical currents pulled by an average RC receiver runs about 30-50 Milliamperes, depending on brand. Servo's add to this by a small amount. But, Servos can easily pull 1000 Milliamperes, or one ampere or more when you go from "Full Up to Full Down" very rapidly. The Servo motor has to stop turning one direction, and instantly reverse direction.

If you've got a 1/4 scale model full of servos, the total current pulled out of the battery can easily peak at 4 amperes or higher. You'd better be using sub C NiHyd cells in these type models to handle the higher currents. Smaller capacity cells can have a voltage drop due to the high loads, which has been known to cause radio receivers such as the Spektrum 2.4 Ghz to "Drop out" for a short time. (If you've got an older Spektrum radio, they will update your receivers to the latest software at no charge. All related information is available on the Spektrum web page.)

Ohms: Ohms is the RESISTANCE of current flow similar to the diameter of the garden hose carrying the water per above. Resistance is a term that defines how many amperes will through a device such as a light bulb, electric heater and so on. (Something to note here, the resistance of a device can vary widely, such as the resistance of a light bulb when cold, and when it is powered up. That light bulb resistance can change by a factor of 10 from cold to hot.)

Watts: Not many meters can measure Watts directly. One that can is the Astroflight Whattmeter. Watts is the product of the Voltage times the Amperes of the unit under test. (This is NOT always true on AC, but that is far beyond the scope of this series of articles.) It takes 746 watts to make one horsepower.

Back in the early 1960's I was repairing several of our circuit breaker controls that were having calibration problems. They could not meet our plus/minus 5 percent tolerance. I had to obtain a precision 0-30 Volt DC voltmeter that was rated at plus/minus one percent to measure the voltage of a one percent voltage reference device that was in question.

That 30 Volt DC meter was about 16 inches square, and was about 5 inches deep! It had a moving needle type meter scale that had a mirror under it so you were not reading the needle "off to one side" for parallax issues. The scale of that meter was hand calibrated against the National Bureau of Standards, and cost the equivalent of one years house payments! And, it only had one range, 0-30 Volts DC. If you wanted another 0-5 Volt meter accurate to one percent, that was another years house payments. Same for measuring current, same for measuring resistance, watts and everything else.

And, if you accidentally connected 120 Volts AC to the 30 Volt DC meter, you instantly burned it up. We quickly developed the habit of double or triple checking the meter to make certain we had the proper meter for what we wanted to measure.

We also had something called a "MultiMeter" that combined the functions of Voltage, Current and Resistance. These meters used analog moving needle scales with multiple ranges, allowing you to measure a 1.5 Volt battery, or a 277/480 Volt AC three phase bus bar. Typical accuracy was something on the order of plus/minus 5 percent.

These analog type Multimeters served us well for many years. But, they also had the annoying habit of burning up if you accidentally connected 120 VAC to a 3 volt DC range. And, these meters loaded down sensitive circuits which really complicated measurements.

Now days, everything is digital in nature, as shown in some of Denny's assortment of Digital Multimeters shown on the next page. The little red meter shown on the left is from Harbor Freight, and on sale, cost $2.99. That is not a misprint, it's under three dollars when it's on sale. And, it is more accurate than that 30 Volt DC meter I used in the 1960s. You can connect 120 VAC to a 2 Volt DC range on this meter and not hurt anything. Oh yeah, if you connect 120 VAC to a **current range** on this meter, you need to go to Harbor Freight to buy another meter! But, even if you should damage it, you are only out three bucks!

The two center Radio Shack meters are in the $50-$75 range, and are no longer made. Radio Shack has similar meters now days such as their model # 22-817. (Some of the cheaper meters may use **EXPENSIVE** batteries.)

That Fluke meter is the Rolls Royce of the multimeters, worth about $375. This meter is just about idiot and damn fool proof, but its interesting to note that the internal fuses ALONE for this Fluke meter cost more than the $2.99 Harbor Freight meter! I've dropped one of these meters from 10 feet to a concrete pad, with absolutely no damage or effect to these meters. This meter has something called auto ranging, where the meter itself automatically selects the proper voltage or current range on either AC or DC.

This meter can also measure frequency, pulse width maximum and minimum voltage, current, and a lot of other stuff, far beyond what's needed for the average modeler. And, I would not have a problem measuring the voltage on a 480 Volt Three Phase bus with this Fluke meter. That would **NOT** be the case with the Harbor Freight or Radio Shack meters!

The top meter is what is called a "Clamp On Ammeter" that was purchased at Sears Roebuck. This is a $60 meter that primarily is used to measure current values, without having to cut into the wires. You simply clamp the meter around the conductor, and measure current. This meter has ranges 0-40 amperes, and 0-400 Amperes, and can measure ***both AC and DC currents***. (Most Clamp On Ammeters are AC current only.) It also can measure voltage, resistance, frequency and so on. This Sears Roebuck (Model #82369) allows the user to quickly measure the DC current flowing into an Electric models brushless motor, without having to use connector adaptors and such. Just simply clamp the meter around one of the battery leads. It can also be used to measure battery charging current from your cars alternator and a lot of other stuff.

If you want to start out with a cheap meter, consider the Harbor Freight $2.99 (or $4.99 when not on sale) meter. If you want the next step, consider the Sears Roebuck #82369 meter. Note that the Sears meter can NOT measure currents such as those pulled by your receiver and servos. But the Harbor Freight plus the Sears meter would be a good combination.
Sears is out of stock in some of their stores on the #82369 meter, but as of this date, Southridge and Brookfield stores have them in house.

Next issue, we will cover the various functions and ranges of the Harbor Freight meter, and how to use and interpret them. (And, why you should have one for your modeling hobby!) And down the road, we'll cover the Sears Clamp on Meter.

More on the A123 Cells

For those club members with access to the Internet, check out http://www.wattflyer.com/forums/.

This site has a tremendous amount of information on electric models, and is gaining a lot of info on the A123 cells. The general consensus on these cells is that even very abused A123 battery packs far outlast the Lipo packs that are properly treated.

More and more modelers are using the two cell A123 2300 MaHr packs for their RC receivers with very good luck. These battery packs can be recharged very quickly with the proper chargers. They, along with the LiPo batteries can be damaged by severe overcharging though. Information on the Internet suggests charging these A123 batteries to 4.6 VDC per cell may result in them opening up. (The proper maximum voltage is 3.6 VDC.)

The A123 cells require the proper charger, and that charger is different from the LiPo batteries. More and more of these chargers have settings for both the A123 and LiPo batteries. The Internet also has some information on what is called the "Zip Charger". This charger is only useable

for either three or six cell A123 packs. It consists of only a 12 volt battery for three A123 cells, Or two 12 volt batteries in series for 24 Volts DC to charge 6 A123 cells. The term Zip refers to only a length of about 8 feet of ordinary lamp cord connected directly between the deep cycle lead acid batteries, and the A123 cells. The resultant charge rate is on the order of 25 or 30 Amperes. You've got to be really carefull with this type of set up. I won't do it, but people are using it.

Some of these A123 batteries are being loaded to 100 Amperes, when used on model drag racing electric cars. And, the Internet is indicating the modelers are getting 400 or more recharges while using the "zip charger. Also noted, these A123 cells have a very FLAT discharge voltage. Mine have very little voltage change until just about completely discharged.

The WattFlyer web site has an author that has many many posts on this web site by the name of "Everydayflyer". This person has thousands of dollars of test equipment for the A123 and Lipo cells, and publishes his results in the Wattflyer forum. Everydayflyer has found that these A123 cells have the remarkable characteristic that as the cells get old, they maintain their voltage output under load, but the Ampere hour capacity drops off. No one has noted any "drop off" in Ampere hours with less than 400 cycles on these batteries. Just about every other rechargeable battery drops off in voltage as they wear out.

The Lipo's typically are considered worn out when their voltage under high load currents drops to 80% of when new. With electric power, that is a substantial loss of horsepower on your model. Like 30-40%.

MILWAUKEE AREA SUMMER FLY-IN SCHEDULE- 2009

Flying Electrons, Inc., Men. Falls, Kohler Lane, May 30-31,2009
Annual Tamarack-Bud Weber Pattern Contest for aerobatics fans(Sat & Sun.)

Circlemasters Annual CL Contest, June 7, 2009 (Sunday)
Wagner Park, Pewaukee, Green Road

Fond du Lac Aeromodelers Fly-In #1, June 20, 2009 (Sat.) (Big-Bird)
Hickory Rd. south of City 2.5 miles. (Also see Aug.14-16 Warbids, below)

Skyranch Flyers, Tn.Wayne, CTH D W.of West Bend, June 27, 2009(Sat.)

Flying Electrons, Inc., Electric Fly-In June 28, 2009 (Sun.)
Kohler Lane,N.of Silver Spring on Pilgrim Rd.,Men. Falls; (Hank Hoelzer)

Pebble Creek Dairyland #106 IMAA Giant Scale, , July 11,2009 (Sat.)
SW edge of Waukesha, take CTH TT, S.of USH 18 to D & DE. (Jeff Voss)

Milw.Co.Field Fun Fly-In (RAMS Club),Franklin,WI, Jul.11,2009 (Sat.)
All aircraft types, new event this year, contact Tom Ryan, 414-881-0070

Flying Electrons Scale Festival, Men. Falls, July 12, 2009 (Sun.)
Kohler Lane from Pilgrim Rd., north at water tower to Railroad crossing

Racine RC Club, Fly-In, Mt. Pleasant/Racine, July 12, 2009 (Sun.)
I-94 to STH 20, east 3.5 mi., N. at red-school house

Astro Wings of Wis., Grafton, July 19, 2009 (Sun.)
I-43 to STH 32 exit, NE to first drive, right (south) WE Energies site

Milw.Co. Field SWARM Helicopter Club, , Franklin, WI July 25 (Sat.)
Raindate 26th (Sun.). S.70th & W. Oakwood Rd. Helicopters only.

Lakeland RC Fly-in, Oconomowoc Airport, July 25,2009 (Sat.)
STH 16 to CTH P, north to and then west on CTH K.

Flying Electrons Charity Fly-In, August 8, 2009 (Sun.)
Menomonee Falls, Take Silver Spring to Pilgrim Rd.,N. to Kohler Lane

Fond du Lac Aeromodelers Fly-In #2. Aug.14-15-16, 2009(Fri-Sat-Sun.)
USH 41 to City edge,So. on Hickory, 2.5 mi. Warbirds & Pre-1960s Classics

MARKS Float Fly, DNR Bong, Kenosha Co., Aug. 22-23, 2009 (Sat.+Sun.)
I-94 to STH 142, west 9 miles to DNR gate, pay admission to enter park. (see enclosed map, Richard Bong Wis. DNR Recreation Area)(Open weekdays)

Rainbow Aero Modelers Society (Club Picnic),Sept. 20, 2008 (Sat.)
Milw. County field in Franklin, S.70th & W. Oakwood Rd., 11AM-3PM

REGULAR ELECTRIC FLYING EVENTS
Bi-Monthly Electric Flying in Franklin
At the plastic dome athletic courts on S.27th Street in Franklin at the Racine Co. line, every other Sat. night 10PM-2AM Sunday, cost $15/pilot, $10/minor. Contact Wes Pichler, 414-313-2819 or web site www.RCFlyer.US.

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**

COMPOST SCHEDULE

	Noon to 2 PM	2 PM to 4 PM
15-Apr	Bob Lupia	Bob Lupia
	Gerald Bublavy	Gerald Bublavy
22-Apr	Gerald Jones	Gerald Jones
	Chris Gagnon	Chris Gagnon
29-Apr	Richard Gobeli	Richard Gobeli
	Jerry Rose	Jerry Rose
6-May	Richard Cook	John Merrill
	John Czarnecki	John Czarnecki
13-May	Shel Berman	Jim Litwin
	Paul Willems	Paul Willems
20-May	Shel Berman	Jim Litwin
	Bill Dollase	Bill Dollase
27-May	David Czarnowski	David Czarnowski
	Richard Cook	John Merrill
3-Jun	Merv Sommerfeld	Merv Sommerfeld
		Don Dalziel
10-Jun	Buzz Parika	Buzz Parika
	Boyd Recknagel	Boyd Recknagel
17-Jun	Jerry Armantrout	Jerry Armantrout
	Gary Anderson	Eric Armantrout
24-Jun	Larry Danko	Larry Danko
	Randy Ruddell	Randy Rudell
1-Jul	Roger Olsen	Roger Olsen
	Jim Strelitzer	Jim Strelitzer
8-Jul	Curt Sommerfeld	Curt Sommerfeld
	Dennis Volrath	Don Dalziel
15-Jul	Jerry Clements	Jerry Clements
	Steve Holly	Steve Holly
22-Jul	Brian DelCampo	Brian DelCampo
	Dick Delany	Dick Delany
29-Jul	Mike Schoene	Mike Schoene
	Ralph Mohr	Ralph Mohr

	Noon to 2 PM	2 PM to 4 PM
5-Aug	Dale Mosher	Dale Mosher
	Russ Zebell	Russ Zebell
12-Aug	Dennis Vollrath	
	Mike Millay	Mike Millay
19-Aug	Jim Engholt	Jim Engholt
	Terry Weber	Terry Weber
26-Aug	Ron Dixon	Ron Dixon
	GaryAnderson	Eric Armantrout
2-Sep	Jim Furby	Jim Furby
	Keith Buska	Keith Buska
9-Sep	Bob Leuck	Bob Leuck
	Don Parkinson	Don Parkinson
16-Sep	Bartz / Dixon	Bartz / Dixon
23-Sep		
30-Sep	Steve Kozlik	
7-Oct		
14-Oct		
21-Oct	Steve Kozlik	
28-Oct		
4-Nov		
11-Nov		
18-Nov		
25-Nov		