



THE RAMS HORN

The Official Newsletter of the Rainbow Aero Modelers Society
Metro Milwaukee Area Franklin, WI Founded Nov. 6, 1980
AMA—Academy of Model Aeronautics Club #1264. Operating for Public Benefit, Milwaukee County RC Flying Field, S.70 & W. Oakwood Rd.

Next Meeting: Wednesday, March 4, 2009 - 7PM
WaterStone Savings Bank, 6560 S. 27th Street
(formerly Wauwatosa Savings Bank)

PRESIDENT'S REPORT by Tom Ryan

RAMS to honor Floyd Katz. In the world of celebrities, those best known can be recognized by just the mention of their first name (Elvis, Frank, Dean or Vanna.) We have ours too. All you have to say is "Floyd" and everyone knows you're talking about Floyd Katz, a fixture at our field and a life long friend of the Rams. Floyd was responsible for so many new pilots entering our sport that I'll bet that even he can't remember them all. Now retired from instructing, Floyd still flies when time permits and enjoys the camaraderie of his fellow flyers every time he's at the field. Floyd will be honored at our March club meeting for all his years of dedicated service to the RAMS. Come share that moment with us as we walk down memory lane with Floyd, enjoy cake and coffee, and hear a story or two from those who know Floyd. This is our way as a club to say "*thanks for the memories Floyd*" and for paving the way for our new core of club instructors.

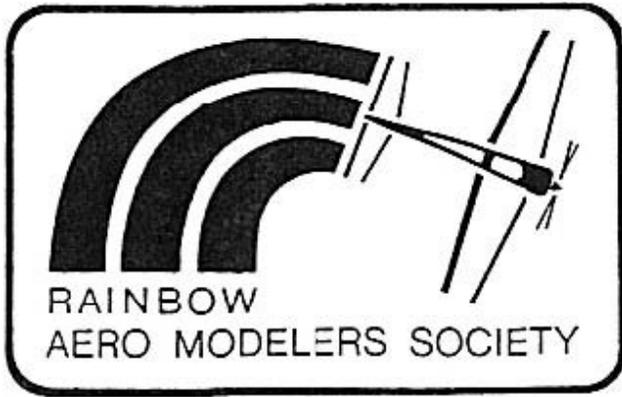
New V.P. doing a fine job! Mike Lutzenberger, our new Vice President, is working early and hard on getting our July 11th Fun Fly-In on track. To date he has secured several donations, and purchased two very nice and unique raffle prizes. The first is the child's pedal plane that was shown at our February

Volume 30 – Number 3, March, 2009 meeting. (photo inside). This little beauty is sure to be a Fun Fly-In eye catcher, and will make some youngster very happy. The second big prize is a gas grill that'll be the talk of the neighborhood for its winner. Mike is currently forming a committee to handle food service, parking, transmitter impound and special events, no small task for sure. The key for us to have a successful event is early preparation. Mike is on the job and making those things that need doing... done, and done early.

Instructor Training Done. On Feb. 28th our instructor core will receive its final training session. That will make it possible to officially announce them at our March meeting. Added to the instructor list is a new "*Check Pilot,*" ***Don Finney,*** to work with those who fly large scale aircraft, and those wanting to.

Spring Help! Hopefully the worst of winter is coming to an end. Soon we'll have to deal with the wet field and the debris that the winter left us. Of course the geese also like to leave lots of land mines all over the place plus little creature holes and ruts will need our immediate attention. After the clean up the rolling starts and we shift our attention to making the field flight ready, that's priority one! Bob Kabella is always looking for some help, so if you can, please volunteer, thanks. (*cont. page 2.*)

Pilot Profile This Issue: Frank Burton (Read 47 past profiles at www.rcslot.com/rams)



Founded Nov 6, 1980 Club #1264 Academy of Model Aeronautics

PRESIDENT MEETINGS-7PM

Tom Ryan cell.414-881-0070 First Wednesdays PO Box 1111
tomcat@execpc.com *WaterStone Sav.Bk Milwaukee, WI
53201-1111 6560 S. 27 Street

VICE PRESIDENT (*formerly Wauwatosa Sav.Bk.) Michael

Lutzenberger 414-483-8038 3518 S. 4th Street mjplutz@Terms of Office are Milwaukee, WI 53207 ameritech.net February 1 through

SECRETARY-TREASURER January 31. Craig R. Manka
262-681-9169 7025 Lambertson Road Membership Dues Racine, WI
53402 craigrmanka@att.net \$20 Jan.1-Dec. 31

SAFETY COORDINATOR

Marvin Anderson-414-535-0764 7511 W.
Congress Street manderson Milwaukee, WI
53218-5447 1952@wi.rr.com

ASSOCIATE SAFETY COORDINATOR

Chuck Bucci 414-425-2930 5270 S. 124th Street
Hales Corners, WI 53130 cbandab@hotmail.com

NEWSLETTER EDITOR

Russell Knetzger 414-962-0637 2625 E.
Shorewood Blvd. Shorewood, WI 53211-2457
rknetzger@execpc.com

LIBRARIAN

Russell Knetzger 414-962-0637 2625 E.
Shorewood Blvd. Shorewood, WI 53211-2457
rknetzger@execpc.com

RC ASSOCIATION DELEGATE #1

Robert Kabella, 414-282-1145 4725 S. 35th
Street Greenfield, WI 53221
rckaboo@yahoo.com

ASSOCIATION DELEGATE #2 Milw. County William
Flannery 414-423-1369 RC Flying Site 6008 W. Glen Court
w.t.flannery@worldnet.att.net Operated by the Franklin, WI 53132
RAMS Club is

FIELD MANAGER Oakwood Rd. at Bob Kabella,
cell.414-331-4725 S. 70th Street 4725 S. 35th Street in Franklin,
WI Greenfield, WI 53221 rckaboo@yahoo.com

FIELD LICENSE ISSUER Field Pilot License James
Hatzenbeller, 414-483-1246 \$50.Mar.1-Dec.31 4388 S. Pennsylvania
Avenue for 2009, Jan. 1 to St. Francis, WI 53235
jimhatzy@aol.com Dec. 31 thereafter.

All Flight Instruction is Without a Fee
WATCH THIS SPACE in the April, 2009 issue for up-
dated lists of flight instructors, following the Nov. 2008
and Feb. 2009 Flight Instructors Training sessions, They
were organized by RAMS President Tom Ryan, and by
Marty Gscheidmeier.

PRESIDENT'S REPORT *Continued from p.1)*
The Year Ahead! We've come a long way in 2008 and
made real progress as a club. 2009 should be even
better as we move on programs that were developed
late in 08 and carried forward into 09. Our new Field
Rules and Club By-Laws are in place and we're getting
more new faces showing up and joining the club.

For those of you who received the new membership
and field license forms, you can complete them and
bring them to the next meeting if you like, and have
your membership card and field license issued to you at
the meeting. **Tom Ryan, 2009 President**

Library Mothballed

by Russell Knetzger, Editor/Librarian The club library
will no longer be brought to meetings. It is a chore to lug
in, set up, take down, and lug out. Nick Johnson and Bob
Kabella help with that, and even for three guys it is a
chore. If the library were used, all that effort would be
worth it, but the library is not used.

For those of you who get the occasional urge to borrow
something from the library, or to order an airplane kit
plan, telephone in your order, and it will be brought for
you to the meeting. The index of what is in the library
will be placed on (www.rcslot.com/rams), the Club
Website. The index covers (1) VHS Videos; (2) books,
and (3) kit construction plans. The Website is maintained
for us by Keith Kittoe, business card below.

RCSLOT, LLC

Keith Kittoe
eCommerce Operations

RCSLOT
5012 W. Ashland Way, Rear
Franklin, WI 53132

RCSLOT.com
keith@rcslot.com

Phone: (414) 421-3305
Fax: (866) 354-9968

Best Products! Great Prices! Reliable Worldwide Shipping!

- Visitors at Meetings or the Field Always Welcome

Happenings at the Meeting

RAMS Club, February 4, 2009

by Craig R, Manka, Secty.-Treas. Photos & some notes by Russell Knetzger, Editor

The RAMS had 34 members present. In usual fashion the meeting was opened at 7PM by President Tom Ryan. Pizzas donated by new Vice President Mike Lutzenberger were served at 7:30 PM during a meeting break. Guest and potential new member Justin Francisco of Hales Corners introduced himself. He has been 22 year in R/C. The club closed 2008 with 85 members, and a \$269 balance. The field sold 125 pilot licenses for the year, and ended with \$303.

Proposed new by-laws mailed to all members for this meeting were voted upon without discussion, and approved with no dissenters. New Field Rules were similarly approved. To a question from Phil Schumacher about the new Spotter Rule, President Ryan interpreted it to mean during time of high traffic. Also, one spotter can serve more than one pilot at a time.

Field Manager Bob Kabella asked about installing the \$1800 spectator fence addition to the west. President Ryan and others noted the same gauge materials can be purchased at Menards for around \$300, and we should install it ourselves. The main need would be to rent a "stretcher" for the woven wire fabric installation. Flood soaking will require more picnic bench repairs this year, Bob reported.

The Club library will no longer be brought to meetings. (see article page 2.) Floyd Katz will be honored at the March meeting for his long devotion to flight instructing. Outgoing Vice President Jeff Borowski explained he is also President of SWARM, the on-site helicopter club, and he doesn't have the time to also be RAMS V.Pres.

New Vice President Mike Lutzenberger gave a prepared short talk on his background and his goals for the year, focusing on the July 11, 2009 Fun Fly-In which he has agreed to head. The great fellowship of our club offsets the loss of his wife from an auto accident, and his paralysis from a ski accident. He sees the July event having a family focus, as illustrated by a \$400 retail children's peddle style airplane car to be one of the one of the raffle prizes (\$300 club cost. See photo above, right.)

Roger Olsen visited the field recently, implying he can do so in spite of his near suspension, and resignation. He left before Franklin Police arrived. The Police later made a study of our County Permit and concluded our field is not like a public park for picnics, etc. Anyone restricted from access, and recorded as such in the police journal, can be removed by simply calling the Franklin Police. Roger is so recorded.



Above: Airplane style child's peddle-powered car raffle prize for July 11, 2009 RAMS Fun Fly-In; \$400 value purchased by Mike Lutzenberger for \$300.

Models at the Meeting

Jim Strelitzer had the most dynamic plane and story for show and tell at the February meeting. His large scale P51 Mustang, done in Red-Tailed Tuskegee Airmen colors, has gained the signature of the actual pilot of the plane during WW II, George Hardie. Pilot Hardie visited Milwaukee this fall, and in the framed picture below is shown on Jim's patio in north Racine, just before the autographing. Like all surviving Tuskegee airmen, George is now in his eighties.



Above: Jim Strelitzer shaking hands with WWII pilot George Hardy of the Tuskegee Airmen, behind Jim's large scale model of the plane actually flown by Capt. Hardie. See next page for close up photo of the cockpit area showing Hardie's autograph on the model.

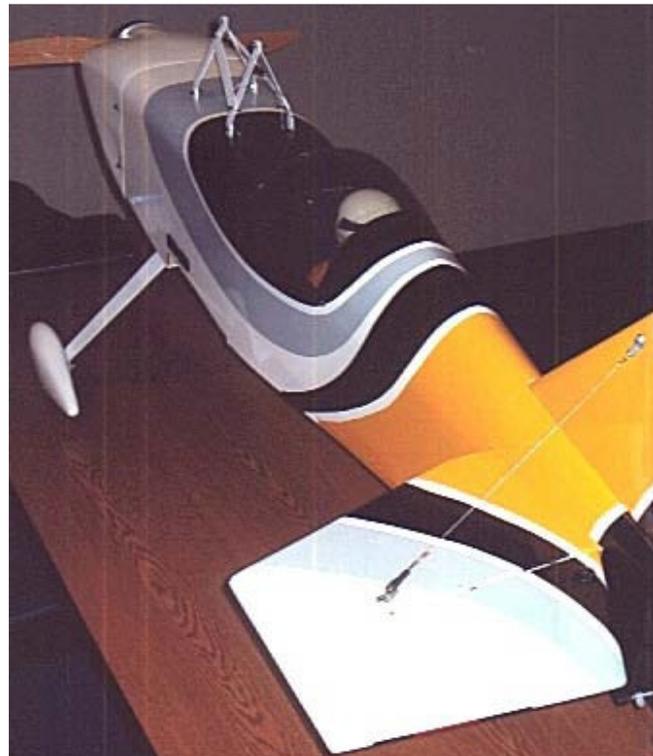
More about Jim's Top Flite model with Robart Retracts and DA 50 engine can be seen in his Pilot Profile published in August, 2008 and found on the RAMS Club website at www.rcslot.com/rams.

Models at the Meeting (cont.)

February 4, 2009



Above: Cockpit close up of Jim Strelitzer's model of the P-51 Mustang flown by WWII Tuskegee Airman nd George E. Hardy, then a 2nd Lt. but retired from the US Air Force as a Lt. Colonel. The photo shows Hardy's actual autograph under the cockpit, inscribed there while visiting Milwaukee the Fall of 2008. After WW II, Hardy returned to active duty, serving in both Korea and Vietnam. (See page 3 for photo of Strelitzer and Hardy.) Strelitzer holds a lifetime pilot's license for the Milwaukee County R/C Model Airplane field in Franklin, Wisconsin.)



Above: Marty Gscheidmeier's Ultimate Bipe at 28% scale, purchased second hand on the Internet from a Tennessee modeler for \$950, DL50 engine, 300 in.oz. torque servos for the rudder, 16-18 lbs total weight. Not shown, a tiltable plastic pipe stand to allow rolling the plane on its side to better access the inards.



Above: Bill Flannery's Lanier 60 ARF with a Super Tigre .90 engine, 60 inch wingspan, and after-market fibreglass cowl to replace the weaker version of the ARF kit. The model assembled had tail weight issues, which Bill corrected.

Meeting Raffle Winners

The RAMS Club offers a raffle each meeting with items most modelers can use. Winners self-select from prizes purchased at local hobby shops, often Greenfield N&H. In February the winners were: Alphons DeRidder of a slow-cure Epoxy glue set; Nick Johnson of a bottle of Frank Burton's donated home made Concord grape wine (see opposite Profile); other wine winners were Craig Manka (twice), and Jeff Borowski; plus Jeff won a digital servo programmer and Don Finney a digital voltmeter; Earl Evans, Dale Champagne and Marty Gscheidmeier of CA glue; and Bob Elhers of four grades of ThreadLock.

HobbyZip.com
Hobby Pictures Hobby Videos

Pilot Profile: Frank Burton

by Russell Knetzger How did a Kansas boy like Francis Burton, born 76 years ago (1932) in a very small rural town called Caney, end up here in Milwaukee? It was via military service in the US Air Force. After working as a hired hand on area farms around Caney until 1952, Frank signed up with USAF, and they sent him for training and service on bases around the country. Schooling in “ground power” maintenance was in Cheyenne, Wyoming. Service was in Tennessee, and in California northeast of San Francisco. Aircraft serviced included F-86 Sabre Jets, and C-47 cargo carriers and RB 45 reconnaissance bombers.

Before shipment overseas to England, Frank was sent to Milwaukee in 1954 for specialized training at **Nordberg Manufacturing Co.** on Oklahoma & Chase Avenues. Nordberg was known for building giant engines and equipment. While here, Frank met and married Bonnie Kukla, who joined him in England.

Upon discharge in 1957, the Burtons settled back here on Milwaukee’s south side, now living in Bay View on Wentworth Ave. between DeMarini’s pizza place, and Groppi’s specialty grocery store. Frank found work in heavy industry at **Allis-Chalmers** in West Allis, **Caterpillar** near Nordberg, and finally **Bucyrus Erie** in So. Milwaukee, maker of giant mining shovels. Frank stayed 25 years to his 1995 retirement as a **welder/fitter** of 1/2” to 9” thick steel.

US AIR
FORCE



Above: Frank Burton in his cellar wine-making space looking at a finished bottle of Concord grape wine, standing near his yeast, & bottle cleaning chemicals.



Above: Frank Burton with his .40 sized trainer on loan from his wife's nephew, RAMS member Dennis Kukla. Frank hopes to start flight instruction this spring.

Bonnie’s nephew, Dennis Kukla, a RAMS member, has been instrumental in encouraging Frank into two hobbies, wine making, (lower left) and now model aircraft (above). Frank obtains concord grapes from his immediate Bay View neighbors. He crushes the grapes, stores the juice in clean plastic barrels, adds yeast for fermentation, constantly monitoring the percent of remaining sugars. At the right time, fermentation is ended, and the juice become wine is bottled. Frank is known for donating bottles of wine to the club meeting raffle.

After his Air Force Service, Frank joined the **Wisconsin Army National Guard** for 21 years, bringing his total military service well beyond the 20 years to qualify for a military pension.

Together the Burtons have reared four children, three born to them, Debra, Timothy, and Steven, and Kimberly by adoption. Among them the children have provided the Burtons with ten grandchildren and one great grandchild.

RAMS HORN, March, 2009, Russell Knetzger, Editor
Rainbow Aero Modelers Society, Franklin, Wisconsin

Severe 2.4 Ghz Radio Test

by Dennis Vollrath, Editor, "The Flightline" – Feb. 2009
Racine R/C Club, Inc., Racine, Wisconsin – Reprinted in the
RAMS HORN, Russell Knetzger, Editor, Franklin, WI

The last issue of RC Report magazine had a very interesting article on the new 2.4 Ghz radios. For those that did not pick up the March issue, if you can find a copy, it is well worth reading.

Cal Orr did the testing. What is totally surprising, is one test they conducted was where they placed a number of Futaba and Spektrum transmitters together, then walked away 350 feet with the model transmitter, and flew the model directly over the mix (within ten feet or so of Futaba and Spek-trum transmitters.)

This is as brutal of a test as you can get. The signal strength of the 40 transmitters is several thousand times stronger than the pilot located 350 feet away! None of our existing 72 Mhz radios would survive a test like this. That would be a certain crash of a model. The tests showed that the Spektrum radios came out on top, next, Futaba, and last (way last) was Airtronics. This may not be a reason-able test in the real world, but it does show how resistant our microwave radios are to the model airplane transmitters, as well as everything else out there on the same 2.4 Ghz frequencies.

Cal Orr gives very high ratings to the Spektrum/JR #AR 9100 four receiver type radio system. He was very impressed by this receiver package. The AR 9100 receiver was pretty much unaffected by everything they did. (But, this receiver is costly.)

They also found that the range of the full range 2.4 Ghz radios is on the order of three MILES in the air, notably more than the 72 Mhz radios.

POP QUIZ: What hobby is practiced by Jay Gordon of Greenfield News & Hobby? **ANS.** Next column over.

Vollrath Series on Website

To save printing and postage costs, the RAMS news letter will have fewer pages, placing Dennis Vollrath article series on our website, www.rcslot.com/rams. There members can read them, printing pages as needed. For postal mail members, a few copies will be available at club meetings. Once the 6x9 inch cat-alog style envelopes are exhausted, the newsletter will come in cheaper #10 business sized envelopes.

Officers reached these decisions in a short session after the February meeting.

Dues & License Fees Payable

This is your last newsletter, and your last week of flying at the field, unless you pay your club dues (\$20) and buy your Field Pilot License (\$50.) The past "grace period" for late payment up to two months longer, by paying a penalty charge, is not permitted by the new by-laws. Be sure to provide proof of your 2009 AMA membership for the club, and that or equivalent home owners insurance liability coverage for the field license. Details P. 2.

POP QUIZ ANS.: South Pacific (i.e.Hula) Dancing.

414-762-0246
1001 Milwaukee Ave., So. Milwaukee, WI 53172
Bryan Lorentzen "B.J." Lynch
Voted "Best in the Burbs"

HAPPY HOBBY
www.happyhobby.com
Club Members receive a discount
8021 W. National Ave
West Allis WI 53214
414-453-3210
7125 N. 76th Street
Milwaukee WI 53223
414-461-6013
See Scott or Laurie for all of your control line needs.
Special orders welcome.

PHONE (262) 554-8884 FAX (262) 554-0539
(262) 554-8636
(866) 820-1732
GARY'S HOBBY CENTER
COMPLETE HOBBIES & CRAFTS FOR ALL AGES
ART SUPPLIES FOR
THE BEGINNER THRU THE ADVANCED ARTIST
MON-FRI - 10:00 AM - 8:00 PM
SATURDAY - 10:00 AM - 5:00 PM
SUNDAY - 11:00 AM - 4:00 PM
ELMWOOD PLAZA
3701 DURAND AVENUE
RACINE, WISCONSIN 53405

HAPPY HOBBY HINT: Before you buy On-Line or at the Mail Order houses, give your local hobby shop a chance. They can often match the price, and may even have it in stock!
(Courtesy of Laurie Jones)

Summer '09 Events Schedule

by Bob Kabella, RAMS Delegate to Milw. R/C Association and by Russell Knetzger, Association Secretary The February twice/year meeting of the Milwaukee R/C Association took place Saturday the 21st at the Wauwatosa Public Library. There are 18 clubs in the association, including free flight, control line and plastic. Ten of the 11 R/C clubs were there. Delegates announced these events:

- May 30-31 Flying Electrons Pattern Contest (M.Falls)
- June 7 Circlemasters CL Contest, (Green Rd. Pewaukee)
- June 20 Fond du Lac Aero-Big Bird FlyIn (Fond du Lac)
- June 27 Sky ranch Flyers Fly-In (Cty.D w/of West Bend)
- June 28 Flying Electrons Electric Fly-In (Men. Falls)
- July 11 Dairyland Giant Scale Fly-In (Waukesha w/side)
- July 11 RAMS Fun Fly-In Milw.County Field (Franklin)
- July 12 Flying Electrons Scale Festival (Men. Falls)
- July 12 Racine RC Club Fly-In (STH 20, Mt. Pleasant)
- July 18 Astro Wings Fly-In (replaces Aug 1) (Grafton)
- July 25-26(R) SWARM Helicopter Fly-In (Franklin)
- July 25 Lakeland RC Club Fly-In, (Oconomowoc Arprt.)
- July 27-Aug.2 EAA Kidventure, (Oshkosh, WI)
- Aug 8 Flying Electrons Charity Fly-In, (Men. Falls)
- Aug. 14-16 Fond du Lac 3 day Warbirds (Fond du Lac)
- Aug. 22 ABC R/C Fly-In (Tn. Concord, Jefferson Co)
- Aug 22-23 MARKS Float Fly (DNR Bong Kenosha Co.)
- Sep. 19 RAMS Fly-In Picnic, Milw.Co.Field (Franklin)

The January 4, 2009 30th Annual Auction & Swap Meet did well, reversing a 3-year decline. It had 672 in paid attendance. Auctioned items totaled \$3,500. Table sales figures are not known, but 142 tables were rented. Profit was \$1400 after \$5,500 in expenses. The RAMS provided 7 of the 35 volunteers, more than any other club, receiving \$70. This is the Association's only funding source. It provides grants to clubs for fieldwork, charity, and youth. Originally Assoc. revenue went to build the Milw. Co. field on Oakwood Road, 1979-87. In 1988 they gave the field to the RAMS Club at no cost.



"I can't understand it. A beautiful highway like this and not another car on it."

RAMS Invited to Airport Museum

The quarterly meeting of the *Mitchell Gallery of Flight* museum group at Gen. Mitchell Intl. Airport,



attend its 7PM March 4th, meeting. (Enter through museum.) Unfortunately, it coincides with our own club meeting, but if the unusual topic is of special interest to you, we can spare a member or two. FBI Special Agent (ret.) Thomas E. Berg will speak along with his co-author, Sharon Thatcher, on a 1970's true story of an international conspiracy to pirate laser technology for weaponry use by militant right-wing extremists. Milwaukee plays a key role because Myron "Mike" Muckerheide, director of research at St. Mary's Hospital, was pursuing laser technology for medical purposes, while conspiracy agents were pursuing him for weaponry applications. Mike became an FBI informant to catch the conspirators. Mike died in December, 2003. "On the Laser's Edge" the book about the whole affair, will be for sale and autograph by the authors.

Remember to buy your 2009 Pilot's Field License, and to renew your club membership. (see opposite page)

Electric Flight News, - XV

by Dennis Vollrath, Editor "The Flightline" – Nov.2008 Racine R/C Club, Inc., Racine, Wisconsin – Reprinted in the RAMS HORN, Russell Knetzger, Editor, Franklin, Wisconsin

Charging A123 and LiPo Batteries

We have discussed the goings-on with the tried and true charging process of the NiCad and NiHyd batteries that have been in use for many decades.

The charging process for the A123 and LiPo (Lithium Polymer) cells is totally different from the process involved with NiCad/NiHyd cells.

In fact, the charging process for these Lithium type batteries is more closely related to the process for your lead acid battery for your automobile than anything else.

What these LiPo chargers are doing, is connecting a fixed voltage charger to your LiPo battery. That voltage depends on how many cells your LiPo battery has. For the most part, these LiPo batteries must be charged, to a voltage of 4.2 Volts DC per cell. So, if you have a 4 cell LiPo battery, that is 4.2/cell multiplied by 4 or 16.8 Volts DC for a pack.

Now, just- connecting a fixed voltage charger alone is NOT allowed. Otherwise you could just connect your LiPo battery directly across your automobile battery and go charge. **DONT EVEN TRY THIS!**

The second requirement for charging your LiPo battery is something called current limiting. For a LiPo battery the charging current must be limited to a value that will charge your battery in about 1 to 1 1/2 hours. That is a limitation of the LiPo battery. Fast charging these batteries is an invitation to drastically shorten the life of your battery (or your house, depending on where you are charging these batteries.)

OK. We need to charge your LiPo in about one hour. Just how do we. do we do this with you LiPo charger? Well look at. your LiPo battery, and determine its Milliampere Hour rating. Typically you will find a rating of 2000 MaHrs, 3700 MaHrs, 6000 MaHrs, or similar. If you want to recharge your LiPo in one hour, you would set your charger at the "1C" rating or the same exact ampere setting as the Milliampere

hour rating of your battery. So that is 2000 Milliamps (or 2.0 Amps) for your 2000 MaHr battery, or 3700 Milliamps for your 3700 MaHr battery, and so on.

In any case, you cannot fly more-than one flight per hour or so with the LiPo batteries due to this recharging time.

Something else here. Let's take a typical LiPo battery for a High Powered Electric model. That would be about a 5000 MaHr battery with 6 cells. We need to charge this at a voltage of 25.2 Volts DC as set up on your LiPo, charger. Now, we can quickly calculate how much power is involved in your LiPo charger. Power in electricity is found by-multiplying volts times amperes. Never changes, its always volts times amperes. (That's for DC. Other factors are present for AC power as found in your house.) So, we have a charger that charges at 5000 MaHrs, or 5 Amperes, multiplied by 25.2 Volts DC, the output voltage of the LiPo charger. That is a power level of 5 x 25.2, or 126 watts. That is about the maximum output power of the typical LiPo Charger such as the Astroflight LiPo charger.

Next issue we'll cover what's involved charging the A123 cells.

About Our Radio Systems, XVII

by Dennis Vollrath, Editor, "The Flightline" – Nov., 2008
Racine R/C Club, Inc. Racine, Wisconsin – Reprinted in the
RAMS HORN, Russell Knetzger, Editor, Franklin, Wisconsin

Measuring In-Flight Battery Current Draw

From past columns you'll recall that I have installed a little digital gadget I put together that records total flying time, total AmpHours for the entire flying year, plus AmpHours for the current flight and Amperes for the current flight. This thing also records current draw every ten seconds, and the current draw can be played back with the LCD display.

That project has been updated to another version that allows the gadget to record total Ampere Hours pulled by the Receiver and Servos for the current flying day. It also shows actual current pulled by the radio, and the peak current pulled by the radio 3,700 times per second!

It produced interesting results. The gadget was installed into my Showtime 50, equipped with the Spektrum DX7 radio system, with five servos; two on elevator, one on rudder, and two on ailerons.

The gadget showed that the quiescent-current pulled out of the battery with no servos operating was about 45 Milliamperes.

The gadget showed that the peak current pulled out of the battery during a typical flight was 1.64 Amperes.

The total Milliampere hours pulled during a 7 minute flight was 37 Milliampere Hours. So if you are flying a glow powered model for 12-15 minutes, you would be pulling 70-80 Milliampere hours out of your receiver battery. That represents an average drain of 300 Milliamperes pulled out of your receiver battery during an average flight.

And, if you have a gas powered model with more servos, you are dealing with quite a bit more Milliampere Hours pulled from your receiver battery during a typical flight.

So, if you are flying a typical .40-.60 sized model, you could get about 10 flights in a day with the typical NiCad battery, with NO reserved of battery capacity. If you follow my recommendations at the

beginning of this Radio Systems series, that would be cut to 5 flights in a day, leaving 50% of the battery in reserve for that "very bad day."

Something else showed up with this thing. The Showtime 50 has "flapperons" programmed into the transmitter. Taking the two ailerons, and palcing a moderate amount of force against them, causing the servos to strain trying to maintain position, the current draw jumped to 750 Milliamperes. Flying with your flaps down in a large model will cause a significant increase in current pulled from your battery. Add to this, if you have one of the larger 1/4 gasoline powered models, the vibration from the engine can result in "shaking" the tail of the model. Since your servos tend to resent being moved from their proper position, this "shaking" can also increase your receiver current drain during a flight.

.....
It goes without saying that you should absolutely never allow a servo to be stalled at full travel, such as would happen with a throttle servo.