



HI-SKY R/C FLYER

March 2006

Volume 35 Issue 3

President: Gene Laughlin
Vice President: Bruce Hoover
AMA Charter Club #851

Treasurer: Ed Anderson
Secretary: David Harrell
www.hiskyrc.com

Meeting:

The March 2006 meeting will be at The First Baptist Church Activity Building March 7, 2006. The meeting will start at 7:00 PM.

Dues:

The Hi-Sky R/C Club dues are due now. Please help our club treasurer out and pay as soon as possible. You may mail your check for \$20.00 along with a copy of your AMA card to P. O. Box 81012; Midland, TX 79708.

Minutes:**HI SKY R/C Club Minutes: February 7, 2006**

Meeting was held at the First Baptist Church activity building.

Gene Laughlin presided over the meet.
Only members were present, no guest.
The minutes from last month were approved as written.

Field Report: Bruce reported that the field looked good. Bruce asked for a volunteer to take over the Field Report. Jim Ruple volunteered to co-chair the Field Report with Bruce.

Safety Report: A.J. again states that it is pretty safe.
Activities: The sanctions for all the events are in the mail expect for the CAF Electric Fly-in. A.J. will get it in

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Batteries-Our reason for flying

By Henry Smith and Jerry Houston

Whether you ever think about the subject or not the batteries we use are the most important part of our flight system. Without batteries we could not control our planes in the air and we might as well hang our model airplanes from the ceiling. An alternative has not been invented. If you look in a dictionary you will find various definitions of battery. We are only interested in the version that states an electric cell or cells that generate electric current by chemical action. For our purposes we refer to more than one cell as a battery pack. The current battery goes back to 1800 when Volta invented the Voltaic cell. The form and shape as well as chemistry has changed over the many years and evolved into the variety we currently use.

Our hobby uses several types of batteries. Most of us use at least one. A few of the trainer type models use "dry cell" or alkaline batteries. Most of us only use these in a flashlight. The lead acid or gel cell batteries are used in our flight boxes to power a starter, fuel pump, or glow plug lighter. Lead acid batteries are heavy and are seldom used in flight packs. Most of us are familiar with the old standard Nickel Cadmium or NiCad (Ni-Cd) battery. We have been using that one for many years in our transmitters and flight packs. The Nickel Metal Hydride batteries have begun to take over the hobby market from the Ni-Cd batteries. The last class is the Lithium Polymer battery. They give a higher voltage and power output in a lighter package. Before we continue with the discussion I want to remind you to never mix batteries of different chemistry.

Charge rate or "C" rating: This is a subject that most of never considered. Our "wall-wart" chargers that came with our radio systems have provided us with the recommended C/10 charge rate for these systems. And if we read and follow the instructions that came with the radio we are told to leave the battery packs on charge for 14 to 16 hours. The term "C" is simply the rating of the battery pack in mah or milli-amp-hours.

Lead acid or Gel Cell battery: The one nice feature

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From the Robbins Nest:

Many of us these days are getting into electrics, and fly airplanes made of foam. As you well know, foam is soft, and can be easily damaged. Not to worry. I'm going to show you how easy it is repair a foam airplane and often only taking a few minutes of our time to do so.

After many flights on my scratch built blue core foam plane, the motor is usually what gets knocked loose. I carry glue to the field for these types of quick and simple repairs, but after several field fixes, the glue becomes brittle, and starts to look less than desirable.

In the following photos, I will demonstrate how easy it is to literally remove the entire nose of the plane, cut new replacement foam pieces, and remount the motor, all in about fifteen minutes.

I hope this will encourage you to attempt those repairs, even if it seems the job is too large, and to consider building your first foam plane if you haven't already done so.

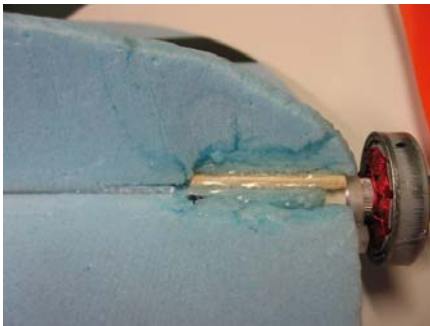


Photo #1 (glue & impact damage)



Photo #2 (cut out damaged area)

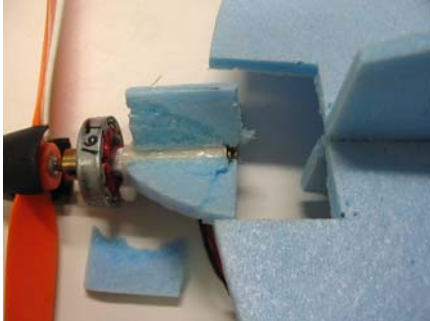


Photo #3 (remove damaged area)



Photo #4 (measure for new piece)



Photo #5 (sand area for repair)



Photo #6 (measure & mark foam)



Photo #7 (glue piece in place)

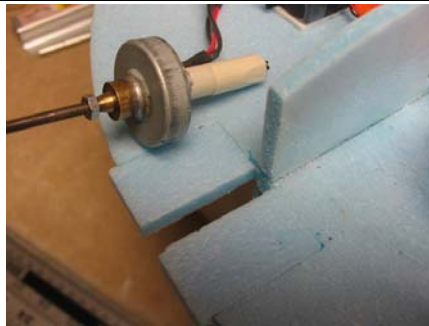


Photo #8 (cut slot for motor)



Photo #9 (mark replacement nose)

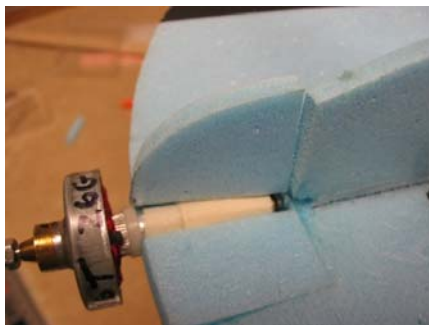


Photo #10 (fit into place)

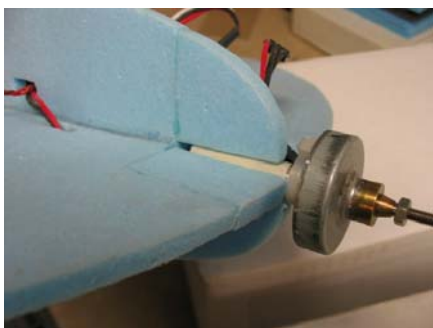


Photo #11 (glue into place)

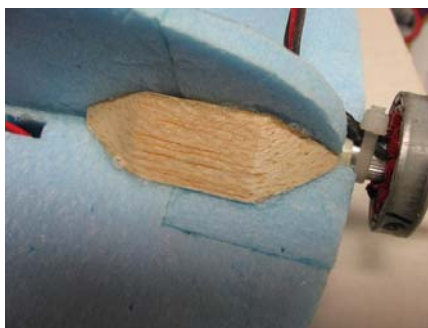


Photo #12 (add reinforcement)

After the above repair, I have performed many flights, with no damage at all to the repaired nose. The addition of the balsa supports has greatly increased the strength in this area, and will be added to all my airplanes.

The above repair only took about fifteen minutes, and as can be seen was a very simple project. Don't let building and repairing foam keep you from enjoying electric airplanes!

Dennis Robbins

You might be an RC Modeler if:

By Bill Atkins, Dixie Aeromasters, Byron, GA

You have ever glued both hands together with CA and had to use an exacto knife in your teeth to cut them apart.

You have built two right wings for a single wing plane.

You ever had to jump over your plane as you were landing it.

You have fuel stains on your brand new sneakers.

the mail this week.

Old Business: Speaking of old business, Chester Tieman is out of the hospital and back home. Chester is doing better. We hope to see Chester at the next meeting.

The new flying site on FM 307 is still underway. Some progress in smoothing the caliche has been made.

The electric flying site at J.C. Kelly Park is available. Remember – Do Not Fly over the homes, playing fields, parking lots or roads.

New Business:

Motion was made and approved to prepay the web site fee for 1 year. Bruce Hoover will take care of this issue.

No one was interested in a club bulk fuel order to FHS/RedMax Fuels.

David Stoner handed out "My Hobby Shop" of Lubbock flyers.

Bruce Hoover has volunteered to do the food at the CAF electric fly-in, if he can get off.

Dennis Robbins has volunteered to do the raffle at the CAF electric fly-in.

There were suggestions for the floor (A.J.) to purchase a complete electric air plane for the raffle (like the Katana-Mini). Bruce Hoover will check into the cost.

Show and Tell:

Bruce Hoover brought a Katana-Mini ARF from Precision Aerobatics with a Himax outrunner and weights about 27 oz.

Dennis Robbins brought a Pogo-Mini JAR., weight 4.3 oz., 2 GWS pico servos, 1 SL110 super micro servo, CC Phoenix 10 ESC, GWS 8X4 HD prop and a 16T 26 AWG CD rom motor.

Jim Ruple had his Lazy Moth II with a GWS gear drive.

Ralph Gillette displayed his Ceramic Battery Bunker for storing and charging LIPO batteries. It will handle heat up to 3000 degrees.

David Stoner brought two airplanes. A Hobbico electric P51 for a 370 gear drive and a Mountain Models Switch Back Sport with a 350 gear drive.

Club Raffle: Castle Creations provided a Phoenix 25 ESC for the raffle. The raffle was won by Ralph Gillette.

The meeting adjourned at 7:50pm.

Upcoming Events:

Odessa Mall Show, March 11 & 12

PS: Jim Ruple, Ralph Gillette and David Harrell hung around until 8:30pm. and we able to fly in the gym for about an hour.

Picked Up Passing By

In case you have wondered about why the club newsletter is sent out via e-mail it is a matter of economics. Using the February 2006 edition as an example the yearly cost to bring you this newsletter works out to about \$11.60 per person per year. It also saves me a lot of leg work. A lot of clubs are only using email for club newsletters for this very reason (cost).

If you know of any club member who is not getting the newsletter for some reason please get their email address and send it to me. I update my email address list when I receive a new address. We will have to work out a solution for the members who do not have a computer.

Model Aviation has added some good departments or monthly columns. It is a better read than in the past. One of the features that used to be in the magazine was "The MicroHenrys" by Ed Henry. That used to be the first thing I read and the only thing my wife read in Model Aviation. His cartoons depicted all of us at one time or another. Many years ago I wrote him and told him how very much I enjoyed his cartoons. I received a book of them. I have long since forgotten how much it cost. But it was well worth every penny I paid. The first page has his thoughts about our hobby or sport.

I would like to quote part of that Foreword about our hobby:

"You are very fortunate if you have a sense of humor. Sense of humor means you laugh at funny happenings but also means you do not take the world too seriously. The gentle humor of the Microhenrys reflects what R/C is truly like and portrays the real heart and soul of model airplane clubs. The Microhenrys will lift your spirit after a bad day at the flying field."

I can remember many scenarios that were depicted in his cartoons that happened in real life. The cartoons made light of those instances and helped me laugh at my problems. Some of you will also remember those bits of humor.

Whether you think you can or whether you think you can't, you're right. Henry Ford

The ability to speak does not make you intelligent. Qui-Gon Jinn Star Wars Episode 1

Everyone must row with the oars he has. English Proverb

CALENDAR OF EVENTS

ODESSA MALL SHOW

MUSIC CITY MALL

MARCH 11 & 12, 2006

You may bring your planes Friday and set up. They have a place to be secure and locked. Contact Loyd Hicks at 366-9705 for details.

WEATHERFORD SWAP MEET AND AUCTION

HALL MIDDLE SCHOOL IN WEATHERFORD, TX

MARCH 24 & 25, 2006

Friday 5 PM to 9 PM-Sat 8 AM to noon-Auction till 5 PM

TEXOMA RC ELECTRIC EXTRAVAGANZA

SHERMAN, TX CLUB FIELD

APRIL 22, 2006

Both indoor and outdoor flying.

BIG SPRING FUN FLY

JOHN WESLEY FIELD

JUNE 10 & 11, 2006

For Sale

Contact Bill Coombes for details.

Phone 689-8359 or better---email at snj24@earthlink.net

Top Flite Spitfire kit...0.60 size complete NIB \$75.00

Top Flite Airacobra kit – 0.60 size with cockpit kit \$75.00

World Models Clipped wing Cub (electric power)ARF \$60.00
New in the box.

Horizon Hobbies PT-19 (electric power) ARF \$60.00 never
flown, almost ready to go.

If you have something to sell, let me know and I will list it
here. My phone number is 570-6262 or email me at:
hksmith35@prodigy.net.

Do what you can, with what you have, where you are.

Theodore Roosevelt

A strong positive mental attitude will create more miracles
than any wonder drug. Parricia Neal

about this battery is you can determine the capacity remaining by using a voltmeter. For example with a 12 volt lead acid battery after several hours of no use attach a voltmeter and read the voltage. 13.00 volts is fully charged and 12.00 volts is fully discharged. The relationship is somewhat linear so a reading of 12.50 volts means that there is 50 percent of the capacity remaining. When charging this class of battery you should not exceed the C/10 charge rate. Using this C/10 rate will require about 14 hours to fully charge a battery from the fully discharged state. These batteries may be called sealed. However all lead acid or gel cell require venting of the oxygen and hydrogen byproducts of charging and discharging. This battery should be stored with the vent up. Never totally seal this battery (this includes gel cells) in a field box where these gases can accumulate. Mixtures of oxygen and hydrogen can cause horrific events if a spark happens.

Nickel Cadmium battery: This battery chemistry was developed for the space program. The battery was invented in 1899. They come in many sizes. Their development has been extensive and it has resulted in batteries that have exceptional life under difficult conditions. Ni-Cds can produce an enormous amount of current for their size. Ask someone who has put their glow plug lighter in their pocket with their keys about the heat developed. Talk about hot pockets. Ni-Cds should be always be charged in series. That is the way our packs are made. They are charged at four different rates: overnight, quick, fast and trickle. The overnight rate is C/10 for 14 to 16 hours. It probably does little harm to leave them longer at this rate. The quick charge rate is C/3 for 4 to 6 hours, but no longer than 6 hours. The fast charge rate is 3C and will charge a pack in about 15 minutes. Last the trickle charge rate is C/50. The trickle charge rate replaces the energy that Ni-Cds lose by just sitting around. They may be left on this rate for an indefinite time without damage. This battery has come under attack from environmental groups because of the cadmium. Several European countries have banned Ni-Cd batteries for this reason.

Nickel Metal Hydride battery: The research on this battery chemistry began in the 1970s. These batteries from Sanyo and Panasonic may be treated the same as Ni-Cds except for peak charging. Meaning fast charging where a peak voltage is detected and at that point the charger switches to a trickle charge. Not all fast chargers will work with Ni-MH and will overcharge them. For a given size battery, the Ni-MH will have about 30 to 40 percent more capacity than a Ni-Cd. They are less prone to "memory" than Ni-Cd batteries. They are environmentally friendly. Ni-MH batteries develop more heat during charging and require slightly longer charge times. Trickle charge settings are more critical also.

Lithium Polymer (LiPo): LiPo cells are the newest technology to come to the market. LiPo cells tend to maintain a flatter discharge curve than the Ni-Cd or Ni-MH batteries. The voltage of a single LiPo cell is higher than Ni-Cd or Ni-MH cells. This is 3.7 V as opposed to 1.2 V for the Ni-Cd or Ni-MH. This makes it possible to have an equal or higher voltage in a smaller package. With LiPo batteries you can achieve higher voltage and power output in a smaller lighter weight package. This sounds great! Unfortunately there is a down side. There is a lot of energy in that small space so we must take some important safety measures when using LiPos. Always allow good ventilation to keep batteries from overheating during operation.

You must carefully monitor the charging process. Overcharging or charging a damaged cell or over discharged cell is a potential fire hazard! Never attempt to charge LiPo batteries at rate over 1C. If you suspect a LiPo battery was damaged as a result of a crash. Wait at least 30 minutes afterwards during which time inspect for swelling or a peculiar odor. If it looks OK try to charge it while keeping a close eye on it. Never discharge a LiPo cell below 3.0 volts per cell under load. You must use an ESC that is programmed to cutoff at the proper low voltage for your pack. You must use a charger that is designed to charge these batteries. Do not attempt to use a charger that is for any other battery chemistry.

With these deterrents or problems, the charging guidelines are well documented in the many instruction manuals and if followed correctly will provide a safe operating environment. The LiPo battery is currently the most popular battery for electric powered models.

For our usage, LiPo batteries have at least two discharge currents to consider. That is continuous and burst discharge rates. The continuous rating is the maximum amperage to safely discharge the battery to cut off. Burst is the maximum amperage that can be pulled from the battery for 60 seconds without internal damage to the battery. So burst is like having an afterburner for 60 seconds. But don't try to extend that beyond the 60 seconds.

Chargers: There is one common thread in all the battery types mentioned. That is use only the charger designed for the battery type. Read any instruction manuals that may come with your charger or battery pack. Be sure to follow the instructions that are in the manuals-don't just read them. There are many good chargers available to buy. Some will charge any type of battery pack and others only one type. I will not recommend any charger as preferred. That is beyond the scope of this article.

