



# HI-SKY R/C FLYER

**January 2012**  
President: Chris Rutter  
Vice President: Henry Smith  
AMA Charter Club #851

**Volume 41 Issue 1**  
Treasurer: Ed Anderson  
Secretary: Matt Allen  
[www.hiskyrc.com](http://www.hiskyrc.com)

## Meeting Notice:

The January meeting will be at Michaels on Tuesday January 3, 2012. The meeting will start at 7:00 PM. Michaels is on the corner of Wadley and "A" Street.

## Dues Notice:

Please be prepared to pay your dues for the year at this meeting.

## HI SKY R/C Club Minutes: December 6, 2011

The Meeting was held at Michaels. The Meeting was called to order at 7:00 PM by President Chris Rutter. 13 members were present plus one guest.

**Minutes:** Minutes were approved as published in the newsletter.

**Field Report:** Jim Tarrt was not present, but sent word by Chris that the field looks good. The weeds are down and the caliche has been spread.

**Safety Report:** AJ was not present for a field safety report. One comment, check the CG on any plane you get. Don't always rely on what the manual says.

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## Arming Switches on Electric Airplanes

By Jim Tiller, Insider Safety Column Editor

This past summer, I learned of a couple of instances where an electric airplane started before the pilot was ready. In one instance, the pilot turned on the transmitter but had it improperly set to another airplane program. Evidently, the programmed airplane had the throttle reversed and when the airplane battery pack was plugged in the motor engaged. Most good ESCs are supposed to prevent this by making you put the throttle to its lowest setting before arming. I'm not sure what happened here.

In the second instance, the airplane was on the bench and the transmitter had yet to be programmed. The throttle stick was in the mid-range. Once again, when the battery was plugged in, the motor engaged.

An arming switch is a good way to prevent any accidental motor start on an electric airplane. They are most feasible on larger motors, but many electric gurus say they can be fitted to an airplane of almost any size.

Another good reason for the arming switch is to be able to plug in the battery and then prepare the airplane for flight. Many times there are cowlings or hatches that have to be secured or other preflight preparations to complete. Why do that with the battery and motor armed?

A number of commercial arming switches are out there. They are not very expensive and are easy to use. Your local hobby shop can surely provide you with one.

If you want to tackle the project in your shop, just peruse the online forums and you will find lots of pictures and schematics. Here's one in the RCGroups forum:  
[www.rcgroups.com/forums/showthread.php?t=1335070](http://www.rcgroups.com/forums/showthread.php?t=1335070)

And here's an even better idea. These two clubs have posted pertinent information and how-to on their websites for their members and others to use. I think

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**Treasurers Report:** We have money in the checking, savings and CD accounts.

**Activities:** We will plan on activities for next year at the January meeting.

Next activity is the Toys for Tots fly in at the CAF on Saturday, December 12<sup>th</sup>. This is a program sponsored by the EAA, the CAF/High Sky Wing and the AMA/Hi Sky R/C club. Anybody that can make it is invited. There will be large planes flying in, the Salvation Army will have coffee and hot chocolate and the High Sky Wing will be doing a burrito breakfast for \$5.00. Dennis, Chris, Jim and Ralph will man the table for HSR/C and fly, indoors. Matt will bring his simulator so anybody so inclined can fly without crashing.

**Old Business:** Question about continued meetings at Michaels. Voted to continue through April and then go back out to the field for the May thru September meetings. We will probably bring this up again later, but we will have the room at Michaels until April.

Bruce reminded us that he still has some Hi Sky shirts left for anybody that wants one. See Bruce.

**New Business:** Time for officer elections.

President	Chris Rutter
Vice President	Henry Smith
Treasurer	Ed Anderson
Secretary	Matt Allen

Safety, Field and Activities will be appointed in January.

**Show and Tell:** None.

**Club Raffle:** None

Meeting Adjourned 7:30PM. The next meeting will be at Michaels on Tuesday January 3rd.

*From RCadvisor.com*

### **A123 Cells**

By Carlos Reyes

Electric model airplanes have been around for roughly three decades. A huge problem in the early days was battery energy density. In other words, they simply weighed too much for the amount of juice you could get out of them. This situation has improved dramatically in recent years with the advent of Li-Poly cells, but a battery pack for a larger model can easily cost hundreds of dollars. The advent of electric cars, such as the Toyota Prius has spurred an enormous amount of research into new battery technologies. In

this article, I will describe an alternative to Li-Poly batteries that offers intriguing possibilities.

A123 Systems ([www.a123systems.com](http://www.a123systems.com)) produces Lithium-Ion Nanophosphate cells. These cells have a nominal voltage of 3.3 volts and can withstand continuous discharge rates of 30C. They can be safely discharged down to 2.0 volts. The voltage remains fairly constant through the discharge cycle, but they do have a sharp drop-off at the end. Expect 300 cycles before you notice any reduction in capacity while at 1,000 cycles you'll have 75% of the original capacity. They are very safe. Overcharging or over discharging will not cause an explosion and will have little effect on the life of the battery. Balancing the cells when they are charged is still a good idea, but not absolutely required. They can be charged immediately after use in 15 minutes.

The cells are available in two sizes. The original M1 cell has a capacity of 2.3 Ah and weighs 70 grams (2.47 oz). A newer, smaller size can hold 1.1 Ah and weighs 40 grams (1.41 oz).

The primary source for A123 M1 cells has been DeWalt 36-volt portable power-tool battery packs. Each pack contains 10 cells. I purchased two of these for \$100 each through Ebay. The prices appear to have gone up recently to the \$120-\$130 range. Single cells can also be purchased online for \$15 from a growing variety of vendors. You can find two of the smaller cells in a Black & Decker VPX battery pack which sells for about \$15. The smaller cells can also be had for \$12.50 each.

There are many Li-Poly chargers that support or can be modified to support the charging of these A123 cells. Because of the sharp voltage drop-off when discharged, you are probably better off using a timer when you fly. Otherwise you need your ESC to shut off the motor when 2.0 volts per cell is reached.

Bottom line? These cells give you 70% the energy density of Li-Polys for about 45% of the price. For many of us, that is a good trade-off. They are extremely safe and can be charged in 15 minutes. If you end up buying half as many battery packs because of the shorter charge time, then they become a much better value. □



## CALENDAR OF EVENTS

The activities will be planned and dates set at the January 2012 meeting. Be prepared to talk about the 2012 activities then.

## TIPS & TRICKS

### Vinegar

To remove epoxy from your hands and arms safely, use white vinegar. It's smelly, safe, and cheap.

### Nylon Bolts

To ease the problem of getting nylon bolts started, bevel the end with a pencil sharpener. This makes the bolt self centering and easier to get started.

### Washout

Have you been coming in long, low and slow only to have one wing tip or stall? Does the airplane roll to one side faster than any other time?

To prevent this you need to check your washout. Lay your wing on a long flat table and hold it down at the center. Measure the leading edge height above the table and then the trailing edge. Do this on both wing tips.

Compare one side of the wing with the other. If they are the same there is no problem. If you have one trailing edge up and the other down you will have a problem. The one that is down will stall first. A better solution is to have both wing tips up about ¼ inch. With this configuration, the center will stall first followed by the wing tips. The airplane will still stall at the stall speed, but it won't be as likely to roll.

### Soldering Jig

For light jobs that require something to hold the wire while soldering, use a pair of pliers to grip and use a rubber band around the handle. The rubber band provides the tension to hold the device in place while soldering. This is easier than trying to hold the device and the solder and the solder gun or other heat source.

### Radial Engine Cowling

For an inexpensive cowling use the black plastic reinforcement from the bottom of a two or three liter soda bottle.

"Propellers are notorious for inflicting serious bodily harm while vigorously defending their space"  
George Aldrich

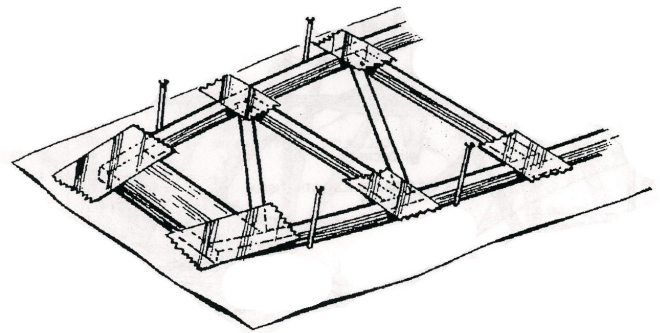
that is a great idea. It would be a simple matter to create a link on your site to these documents or write one of your own.

Here's a great reference from the East Bay RC Club in Livermore, Ca:  
[www.eastbayrc.org/TimTips/TimsTips\\_ArmingSwitch.htm](http://www.eastbayrc.org/TimTips/TimsTips_ArmingSwitch.htm).

And another from the White Hills Eagles club in Shelton, Co:

[www.whitehillseaglesrc.org/membercontent%5Ctransmittercutoff%5Celectricflightthrottlesafety.pdf](http://www.whitehillseaglesrc.org/membercontent%5Ctransmittercutoff%5Celectricflightthrottlesafety.pdf).

## TIPS & TRICKS



The usual technique of building two identical sides by building one above the other usually results in the sides requiring careful separation with a razor blade. This can be eliminated by placing pieces of Scotch Magic Mending Tape over each glue joint, thus preventing the second side from adhering to the first.

—Ken Simpson, Cedarburg, Wisconsin

### Repairing Loose Firewalls

Many times we have a firewall get loose and we 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. This will insure a good repair. If it is an ARF, I recommend adding a length of triangular stock to both sides. Be sure to use a long-working epoxy because the heat will speed up the process or reaction. Also remove the fuel tank, fuel lines, and any other part that could be damaged by the heat.

**From The Robbins Nest:**

**The AMA and the CAF recently signed a Memorandum of Understanding, as reported in the January 2012 issue of Model Aviation. (p. 164) What this means to us locally is that our club can form a bond with the CAF, and pull together to promote all forms of aviation to the general public. This understanding will evolve as time goes on, but already we have had an opportunity to participate in a local CAF event.**

**On December, 10<sup>th</sup>, the CAF hosted their annual TOYS-FOR-TOTS in the new hangar, and many folks from the local area were in attendance. The Hi-Sky RC club was invited to set up a table with airplane and club displays, and an area was cleared for indoor RC demo flights. Those from the club who were in attendance were Chris Rutter, Ralph Gillette, and Jim Tartt. Parker Rathbun, Jamie Hicks and I flew 3D foamy demos, while the other guys took to the air with Vapors, helicopters, and small aircraft. Matt Allen and James stopped by to offer support of the event.**

**It was a huge success, as many folks stopped by to visit, watch and ask questions during the brisk December morning. You will be hearing more about the Memorandum of Understanding between the AMA, our club, and the CAF as we begin to work together to promote aviation in our local community and beyond.**

**This is really going to be exciting as we move forward into the New Year with a potential place to fly in the near future.**

**We have already discussed briefly the prospect of the Hi-Sky RC club hosting a three day event at the CAF large hangar, and even a date has been selected. Even better, we discussed the possibility of getting to fly once a month at the large hangar! There are several details to work out, but this will definitely be a win/win for Hi-Sky RC club, AMA, and the CAF. I'll share more at the club meeting on Tuesday.**

**Enjoy the photos of the CAF TOYS-FOR-TOTS.**

**Fly low and often,      Dennis Robbins**





