



HI-SKY R/C FLYER

September 2006

Volume 35 Issue 9

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

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

Meeting:

The September 2006 meeting will be held at the First Baptist Church Activity Building at the corner of Garfield and Louisiana on September 5, 2006. The meeting will begin at 7:00 PM.

The minutes below are published again because our August meeting was rained out. These minutes still need to be approved.

HI SKY R/C Club Minutes: July 11, 2006

Meeting was held at the flying field.

Gene Laughlin brought the meeting to order at 7:00pm. There were 23 members present including one new member and one visitor.
The visitors were: Steven Bowers's son.
The new member was Victor Jaugilas

The minutes were approved as written.

Safety Report: AJ Lee says that things are pretty safe.

Activities: Gene Laughlin reported on his helping at the library in the summer reading program. He built 15 Delta Darts to pass out to the children in attendance. They built one by having the children read the instructions. After it was built, they flew it in the library. Some of the guests apparently did not approve.

CAF indoor electric Fly-In and Swap meet: Dennis Robbins reported that we still need volunteers to work some of the hours Saturday and have no one for Sunday. There are 40 tables that are 8 feet long. He asked that the Midland

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From the River District RC Eagles, Saint Clair MI
Which is Better: PPM vs. PCM?
By Ed Olszewski

Aside from all the other choices when selecting an RC radio system, the terms PPM and PCM comes up. PPM or Pulse Position Modulation is standard FM. The next step up is PCM or Pulse Code Modulation which seems to be shrouded in mysticism. In a nutshell, it is not what frequency each is on, but how they use their frequencies.

To demystify PCM somewhat you should understand that there is no range increase with PCM. It is not on some special side band or frequency. It shares the exact same FM frequency everyone else on your channel is using, and is susceptible to the same interference. There is, however, improvement in noise reduction and safe performance while the noise is received.

Noise is the undesirable signals on your frequency. They can be caused by anything from sunspots to another transmitter horning in on your frequency. Today's modern radios operate on a narrow band that eliminates most of the random noise. Basically, the PCM radio takes your FM signal and "codes" it digitally (the "C" in PCM). Then the PCM receiver "decodes" the signal to utilize it.

Since noise is not a normally recognized code, it is ignored by the PCM receiver, and is not sent as servo instructions. In addition PCM does not transmit position signals for each servo in each transmitter pulse. Rather it transmits movement commands as required, and occasional positions confirmation commands. Short periods of interference will simply leave the servo at its last known position, and not show such radio interference as glitches or fluttering.

If your PCM receiver continuously receives interference past the preset time, it then switches into "failsafe mode," and obeys some preset commands you programmed in the receiver. For example, you may set failsafe to throttle down and move all other surfaces to the neutral position. This is great if you are in level flight, but disastrous if you are exiting a loop. If set to continue the last command, it will often keep your model in the loop. Unfortunately, failsafe settings will put your model in a precarious situation you didn't want it locked into. A third level of protection may be obtained by using a pilot assist module in combination with preset positions on the failsafe settings. You can help ensure your model will go to level flight at a slow—but safe—airspeed and hopefully safely ride out the interference.

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From the Robbins Nest:

Cutting props used with electric park flyer airplanes

By Dennis Robbins

Electric airplanes are continuing to gain in popularity, which can easily be seen in the abundance of kits, motors, speed controls, and accessories. The availability of supplies used in the electric world of R/C is making the construction, setup and flying of these hobby wonders so easy that almost anyone can have an electric plane in the air in just a few hours.

Sometimes, even with all the available supplies, you still have to make or modify your own parts to get exactly what you want, and that leads us to this article about cutting props.

There are a lot of different props made for the electric enthusiast, but what if you need one that is not available, or perhaps you want a prop that has just maybe a little less diameter than the ones readily sold in the hobby stores? What if you have a nick out at the end of the prop, or perhaps you prefer a certain pitch, but not the diameter? Why not modify them yourself?

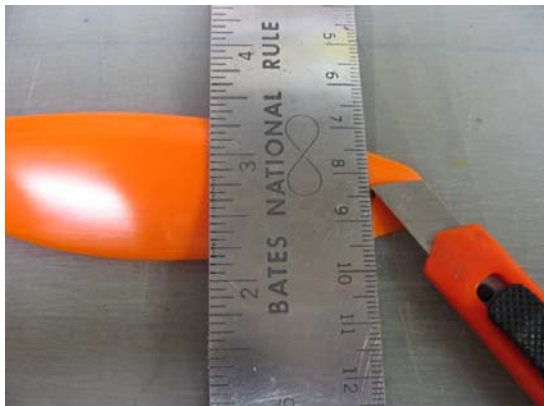
Here is how I cut and modify my props for slight modifications in the performance of my aircraft. By reducing the diameter from 10 inches to 9 inches, greater prop clearance, and reduced airspeed were attained for a particular plane.



Stock 10" x 4.7 slow fly prop.



Measure 4.5" from the hub, and mark.



Cut prop using straight edge.



Cut, but not sanded. Just snap along the Knife score mark.



Sand to desired shape.



Balance prop after any modifications.

Preliminary results of the channel usage survey:

Channel 36 has the greatest usage with 5 people reporting transmitters on that channel. Channels 38 and 52 have 4 each and channel 33 has 3 transmitters. We don't have 100 percent of our club reporting as of yet. What does this mean for you? This means if you have a radio on any of these four channels you may have to wait to fly while someone is flying on your channel. You don't do any of the things we have grown accustomed to doing such as range checking without regard to who is flying. There are less used frequencies available.

When I receive a large percentage of the clubs usage, I will present the entire spectrum in the newsletter.

club members share a table so that would be plenty for the out of towners. Steven Bowers showed a portable frequency board that will be used for this event. The west gate will be unlocked for participants but that it should be kept closed. The B-29, FiFi, and a Corsair will be in the hanger. There is a change in the fees from \$10.00 each day to \$10.00 for both days. There is a need for extension cords for this event.

Jim Ruple read a list of events that are coming up.

Old Business: Gene Laughlin gave a report on meeting with the parks representative about the lease agreement for Coles Park. In addition to Gene; A. J. Lee, Mike Chase, and Henry Smith attended the meeting. The agreement will go to the city attorney for approval. Gene asked Ed Alexander and Rick Strange to review it when it is returned.

New Business: The club building was broken into. The Sheriffs department was called. The deputy recommended installing a "dummy" video camera and signs stating the place is monitored. This was put into a motion and was seconded. The motion passed.

Henry Smith made a motion to build two new safety stands from treated wood and purchase enough lumber to repair the existing stands. The estimated cost for this project is \$125.00. The motion was seconded and passed. Jim Ruple volunteered to purchase the lumber. The date for building the stands has not been set.

Henry Smith asked members to submit the channels they are using so that a chart may be made and kept up to date. This would help avoid having several members using the same frequency.

Show and Tell: Jim Ruple brought an E-Flite P-47. Total weight is 20 ounces with batteries and radio. The wing span is 39 to 40 inches. The cost is \$79.00.

Club Raffle: No raffle.

The meeting adjourned at 7:40pm. After the meeting several members flew until the sun went down.

Picked Up Passing by:

Here is another reminder that the Annual Callin' of the Hogs is coming up soon. Get the old bird out and check out the battery pack. If you have the capability,, cycle that pack to find out if the cells are all OK. Is the capacity up to at least 80 percent of the rating? Make sure the engine will run, make a check on all functions and give it a test flight.



The Astro Hog was originally designed by Fred Dunn about 1957. He went on to win the 1958 NATS with it. In fact it

took four places at the 1958 Nationals. I am told that it was the first low wing airplane to successfully utilize ailerons. The original Hog was a tail dragger and was originally kitted by Berkeley. When Berkeley went bankrupt in the early 1960s, SIG bought the rights to all their kits. Sig updated and re-released the Astro Hog in November 1983. Their plans provides for either tricycle or tail dragger versions.

SIG states in their advertising that the Hog is not competitive with today's high-tech pattern ships. But it does offer today's sport flyer amazing aerobatic performance in a stable, easy to fly model. It will perform most of the maneuvers, yet it will fly slow enough to let you enjoy it. It is a great second model for the person who has mastered a trainer. "Nothing flies like a Hog" is a slogan that has been tied to the model. I have seen them flying with a .46 2 cycle up to 1.20 4 cycle. Porter Wallis had an electric powered Hog.

We had a good representation at the Odessa Big Bird fly In. I saw Gene Laughlin, Mike Chase, Rick Strange, Tony Lara, Jim Ruple, Jim Tartt, and Andy Wohl. I hope I didn't miss anyone. I enjoyed seeing the big planes in the air. The B-17 model flying was fantastic. I think it only flew once on Saturday.

Are you aware that Sanyo date codes their NiCd batteries? The first letter is the year and the second letter is the month of manufacture. 1996 was the first year and was "A", 2000 "E", 2001 "F", 2002 "G", 2003 "H", 2004 "J", and 2005 is "K". The months are "A" through "M". January is "A", February is "B", and so on to December being "M". The letter "I" is not used. If you have a battery with "DL" stamped on the side that battery was made in November, 1999. At least one battery manufacturer gives us an indication when their batteries were manufactured.

Do you make a note when you put the battery pack in service? Some people replace packs after two or three years use even though the capacity may be up to par. This is the one item that our models depend upon. I recommend that you have a plan for replacing after two years or that you diligently have a plan for cycling the batteries you use. If you follow the cycling plan, record the capacity each time and when the capacity gets below 80 percent get a new pack.

Do you use an ESV (expanded scale voltmeter)? For those readers who don't know what this is, I will try to explain. This device places a load on your flight battery pack that is similar to the in flight load for a .61 size model. That is about 250 mah. These ESVs come with an analog or digital readout. As long as the voltage measured is 4.8 or higher, you are safe to fly. Below 4.5 volts is considered unsafe. Between 4.5 and 4.8 volts is risky. In other words, is it worth taking a chance for one more flight? There are other devices that do the same thing as an ESV. The most common here is the VoltWatch by Hobbico. This is plugged into a spare plug on the receiver and monitors the voltage.

We tend to forget that happiness doesn't come as a result of getting something we don't have, but rather of recognizing and appreciating what we do have. Frederick Koenig

CALENDAR OF EVENTS

SHERMAN TX IMAC CHALLENGE

SHERMAN'S PETE DARTER FIELD

SEPTEMBER 2 & 3, 2006

ROSWELL FLY IN

ROSWELL AIR PARK

SEPTEMBER 2 & 3, 2006

BIG SPRING FLOAT FLY

COMANCHE TRAIL PARK

September 9 & 10, 2006

CALLIN' OF THE HOGS

MIDLAND CLUB FIELD

September 16 & 17, 2006

Clovis Oktoberfest fly-in

MADS Club field

October 7, 2006

25th Annual Angelo RC Fly In & Swap Meet

San Angelo Club Field

October 14 & 15, 2006

For Sale:

Chip Hyde Double Vision Biplane – Includes fuel tank, fuel dot, control horns and switches. \$400.00 Call Rick Strange on his cell phone, 553-3627.

Top Flite Spitfire kit..... .60 size....Complete NIB \$75.00

Top Flite Airacorba kit.... .60 size with cockpit kit \$75.00

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

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

Contact Bill Coombes at 689-8359 or email at: snj24@earthlink.net

JR 622 radio on channel 28 with 5 servos, receiver, Xmitter, batteries, manual and charger. \$90.00

Hitec CG-335 NiCd charger (4 to 24 cell packs) \$40.00

Henry Smith at 570-6262 or: hksmith35@prodigy.net

Even though the radio does not glitch, it is not to say the PCM radio was in good contact at all times. If another radio is transmitting on your frequency, it can—and likely will—interfere with your receiver's ability to receive the proper signal from your transmitter. The CB radio enthusiast in the seventies used to call this being "walked on." PCM will help keep your receiver from acting on a bad signal, but there is nothing it can do if a good signal can not be received over the interference.

The logic of PCM is that it is better to momentarily do nothing than act on a bad signal. PCM benefits are purely in precise transmitter/receiver communication. PCM does, unfortunately, have a serious weakness. Even minimal atmospheric or external noise can foul up those wonderful intricate binary numbers beyond any correction. In that case, the receiver is up a creek without a paddle. Think of it as if trying to communicate a grocery list via cell phone in a "one bar" area—some things are not going to make it in the grocery cart. With PCM the main purpose is to hide glitches by not transmitting them to a control surface command. As far as the pilot is concerned, there is only an unnoticeable momentary loss of control. If the radio interference is persistent, the pilot will probably be unaware and may lead to total loss of control sending the airplane either into the wild blue yonder or to the ground.

On the other hand, the simple PPM pulses may be corrupted with some information getting through. When things go bad, the choice is between no control (PCM)—and some control (PPM). Most RC pilots would prefer having some control even if erratic. When a model aircraft is suddenly doing the funky chicken, it is normally a signal to land. Most radio interferences are normally small glitches and are recoverable, giving the PPM pilot a chance to land and find the cause of the problem.

The bottom line is if you are looking for a bullet-proof radio system to keep your airplane from falling from the sky, it does not exist. A system sporting PCM is an excellent choice for larger acrobatic and 3-D fliers with quick throws, where a small glitch may send it suddenly into the ground. PCM will of course work on smaller, more docile airplanes. These airplanes will benefit less from the added features, and PPM is probably a good bet. Remember there is no substitute for a good battery charge and a range check. If another radio on your frequency is turned on, there is little any radio can do to keep you from being "shot down."

Everything is funny as long as it happens to somebody else. Will Rogers

Not everything that can be counted counts and not everything that counts can be counted. Albert Einstein

A stockbroker urged me to buy a stock that would triple its value every year. I told him 'At my age, I don't even buy green bananas.' Claude Pepper

You don't need a weatherman to know which way the wind blows. Bob Dylan

Prop Balancing for Ultimate Performance

By Bruce Hoover

I never really thought much about prop balancing until I was breaking in a new Magnum .15 for my first combat plane. I put the prop on right out of the package without balancing. After about 30 minutes of break-in time, I started to lean out the engine to see what she would do. Every time I would get it up to top RPM it would start to vibrate so much that I couldn't see the head bolts very well. So I decided I needed to balance the prop.

I proceeded to look at prop balancers and I came up with what I call a poor mans magnetic prop balancer. It consists of a hand prop balancer, 2 steel angle brackets, and some strong magnets. I already had a couple of angle brackets lying around my garage. A friend gave me a finger prop balancer and I purchased some magnets at Hobby Lobby. They are called power magnets with 6 to a package and sell for \$2.99. The hand prop balancer costs about \$4.00.

I placed 3 of the magnets on each angle bracket and clamped them to the bench far enough apart that the prop balancer would fit between them.

The prop balancer has pointed ends on it so that when it is suspended between the magnets there is almost no friction. As a matter of fact you might have to turn off the ceiling fans to keep them from interfering with the balancer. As you can see in the pictures these magnets are strong enough that the prop balancer is only touching on one side even with a 24 X 10 wooden prop in the balancer.

After I balanced my props I was able to get the maximum performance from my little .15. Taking a little bit of time to balance your props will get you the best performance from your engine or motor. And you will extend the life of your engines, motors, and airframe. All this for less than \$10.00 and a few minutes! That is a dandy deal!

Here are a few pictures to show how it works.

