



HI-SKY R/C FLYER

March 2008

Volume 37 Issue 3

President: Bruce Hoover
Vice President: Dennis Paschall
AMA Charter Club #851

Treasurer: Ed Anderson
Secretary: Ralph Gillette
www.hiskyrc.com

Meeting:

The March 2008 meeting will be held March 4, 2008 at the First Baptist Church Activity Building on the corner of Garfield and Louisiana streets. The meeting will begin at 7:00 PM.

HI-SKY R/C Club Minutes: February 5, 2008

Meeting was held at the First Baptist Church Activity Building.

Bruce Hoover brought the meeting to order at 7:10 PM. There were 19 members present, including four new sign-ups.

The minutes were approved as presented in the February News letter.

Treasurers Report: We have money in the checking account, in the savings account and the CD is working.

Field Report: Bruce reported that the field looks pretty good. The clean up party last weekend went well, most of the surface was sprayed for weeds, may need a little more to finish up. Ed Anderson reported we got a bill for the Porta-Poties. Bruce promised to call them and cancel our monthly service until the summer.

Safety Report: A.J. Lee says everything has been safe. The new fencing looks good and seems to work

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January Safety Notes

By Chuck Waller AMA District VIII Safety Coordinator
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It's a New Year – Are you ready??

A lot of pilots hate this time of year. The weather is usually not favorable to flying, so we sit around dreaming of sunny days and light winds. For others, this is building season. Time to get that new plane built and ready to soar in the spring.

Thankfully for most of us in the district, the weather has been unusually warm this winter so we can still get out to the field and keep the “rust” off of our thumbs. I was on my way home from a business trip Saturday and decided to visit several clubs along the way. I ended up at 5 clubs in one day! I was very pleased to see pilots enjoying the sunshine at all of them.

I did, however, see a couple of things that caused me some concern. At one field a pilot was flying a new plane for the second (or third) time. He started the plane, taxied out and turned into the wind. As he applied power I noticed the right wing scrapping the ground. Before I could say any thing, the plane lifted off and rolled hard to the right. The pilot chopped the throttle and the plane seemed to straighten up some, so he again applied full power and the plane immediately rolled into the ground. One of the “onlookers” said “That looked like you had the wrong plane programmed!” The sad pilot looked down and saw he was right! Seems the pilot had been programming another model the night before and had not changed the transmitter back to the model he was flying! Of course, a proper pre-flight would have prevented the crash. We all get in a hurry to show off our latest plane, but always remember to do a pre flight control check “Just to be on the safe side”!!

The other situation involved a helicopter pilot that has been flying “Choppers” for about 3 months. Anxious to show me how well he could handle the craft, he put on a very nice flight. I, and the others watching, was duly impressed with the control he demonstrated. Then at the end of the flight he brought the chopper

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From the Robbins Nest:

Local Indoor Electric Events:

San Angelo, TX, March 15th & 16th The TINY. This event will draw approximately 50 – 60 pilots from all around the nation. Last year included a hover off contest, (Last plane in the air wins!) and this year the F3P pattern contest has been added. They will fly the F3P-C, and F3P-A pattern, for novice and advanced pilots, and Saturday night will include a freestyle contest. There are at least two or three ETOC pilots planning on attending this event, and you will see some of the best flying around.

Plainview, TX April SPEF indoor fly-in. More details next newsletter

Midland, TX, Saturday, July 12, CAF indoor fly-in. 9AM – 5PM

Midland, TX Saturday, Nov 1st, Horseshoe arena, 8AM – 11PM

Cirrus F3P pattern plane, (club build) Six club members signed up to build an indoor pattern plane. The material for the airframe has arrived, and will be distributed at the club meeting. For \$15, you get everything to complete your airframe. I plan to demonstrate how to cut depron foam, cut your hinge lines, and tape the control surfaces at this club meeting, you don't want to miss it! Even if you have never scratch built a plane, this demonstration may be what you need to get started in indoor electric planes. I'll bring my plane for you to look at.

Members who are participating in the club build include:

Bruce Hoover, David Harrell, Jeff Laufer, David Ingram, Jon Wheeler, Tom Kuhn

And here are a couple of photos of my plane in action, taken by Mike Robbins, and Reegan May.



well. Bruce will see if he can get some more.

Activities: See the events calendar for dates of the next activities.

Electric Fly at CAF – Dennis is trying to get 12th of July. HE has not gotten a response from CAF yet. Ralph Gillette will make the contact.

Electric Fly at the Horseshoe – Everything is go. Bruce has made contact with the management and once Dennis gets with them on the contract, will make a \$500.00 deposit to hold the date.

Regional Fly-In – Gene Laughlin reports that he has had e-mail contact with the Lubbock group. Nothing has been set up as yet; Gene has invited their group to our next fun fly.

Fun Fly – Scheduled for Saturday, February 9th at 9:00 AM. AJ moved that we charge \$1.00 entry fee for each event a flyer wants to enter, winner takes the pot. Gene seconded and it was approved.

New Business: The AMA is offering a Park Flyer license. This is less expensive the full membership and does not carry the same level of insurance. It is up to each club if they want to allow members with that license to fly at a club field. Gene moved and Chris seconded that we table the decision until we find out how Jim Hall feels about the lower insurance rate. Approved.

Show and Tell:

Dennis Robbins brought two foamy electrics. One is a Nexus, the other is Cirrus. Dennis has offered to get the materials together for those who want to build a Cirrus for the next set of indoor events. The plans are available off the Internet. Dennis figures the cost will probably be about \$15.00 per plane. A sign up sheet was passed around for those interested.

Bruce Hoover brought his foam wing that is the beginnings of a combat flying wing. Very simple and with the carbon fiber rod for reinforcement, should be sturdy.

Gil Hernandez brought his fun fly profile design. He said he was going to make a combat plane but got carried away.

Meeting adjourned at 7:45 PM.

The only way to have a friend is to be one.
Ralph Waldo Emerson

Picked up Passing by

The other day I noticed a paper on my chair that sits in front of the computer. I asked my wife why it was there and she said something like “I thought you might like to have it.” I thought nothing more about it at the time. When I sat down to check the daily spam and email I noticed its date was September 20, 1998. There was an excellent write up about our “Callin of the Hogs” for the day before. On the front page was a picture of Charles Young of Archer City with his Astro Hog. Inside is a picture of Brandon Durham, at 12 years of age, carrying his Astro Hog from the flight line. Also there was a picture of Greg Johnson with the transmitter in his hands. The article mentioned Bill Coombes, Larry Olsen, A. J. Lee, John Laney, and William “Bill” Gates with comments from each person. I think this was our second Callin of the Hogs.

I understand what was attributed to A. J. Lee concerning radio control piloting: “You get the benefit of flying and staying on the ground. If you crash, all it hurts is your pocketbook and your feelings.” I only wish I didn’t understand that comment. Someone has said that all model airplanes have an expiration date, we just don’t know what it is.

I drove out to the flying field February 17 just to see if anyone was flying and there was a good group there. There were three new people learning to fly and several others flying. We should count ourselves lucky to have a field near town and with a low cost, thanks to the generosity of Jim Hall.

Dennis Robbins’ proposal to help others build an electric plane is commendable. I think he will give a demonstration of the building techniques involved to produce a flying model. This should be interesting to all who attend the meeting. Dennis has pioneered the electric modeling program and has produced some excellent articles for our club’s newsletter. I am thankful that Dennis has volunteered to share his knowledge with the rest of our club members. He is a great resource for electric model airplane information.

Everyone should begin to be aware of the snake problem. They have been quiet and probably underground for the winter. By the end of March we can expect them to come out from their winter hiding and begin looking for food. We aren’t in their food supply but we could become a “target” if we surprise them. I am just trying to warn everyone to be aware of their existence and that they will be “coming out” soon.

If anyone has the inclination to write an article for this newsletter let me know. If you need help we can do that. Just let us know if you are interested.

CALENDAR OF EVENTS

2008 T.I.N.Y. FLY IN

SAN ANGELO COLISEUM

MARCH 15 & 16, 2008

They have a great location and some good raffles.

WEATHERFORD SWAP MEET

HALL MIDDLE SCHOOL

TIME MARCH 21 & 22, 2008

Open 5-9 Friday and 8-5 Saturday

FAJITA FUN FLY

MIDLAND CLUB FIELD

MAY 17, 2008

MIDLAND AND ODESSA IMAC CONTEST

ODESSA CLUB FIELD

May 24 & 25, 2008

July 4th Fun Fly and Club Combat

Midland Club Field

July 4, 2008

CAF Fly In

CAF Hanger

July ?, 2008

Callin' of the Hogs

Midland Club Field

September 13 & 14, 2008

HorseShoe Fly In

HorseShoe Arena Midland

November 1, 2008

The only real mistake is the one from which we learn nothing. John Powell

A joy that's shared is a joy made double.

Old English proverb

At my age I do what Mark Twain did. I get my daily paper, look at the obituaries page and if I'm not there I carry on as usual." Patrick Moore

I'm desperately trying to figure out why kamikaze pilots wore helmets. Dave Edison

back to him and turned around and "flew" it past the safety fence and into the back of the pit area! He landed it about 6 feet in front of several pilots seated at a table. When I told him how dangerous his action was, he said he was just "taxiing" in after the flight. Several of the other pilots around the table also told him it was a bad idea. This club has a rule stating "No taxi in the pit area". This pilot is a friend of mine but I still had to admonish him for his actions. In the end, he realized how dangerous his action was and promised not to do it again.

This is a fantastic hobby that we all enjoy. Let's all strive to make it safe for every one at the field when we fly. Several large events are looming on the horizon, so get your "birds" ready for a fantastic year!

I hope to see you at a field near you this coming year!

Until then, Fly Safe and have FUN!!

Rules for Being Human
From WingFlaps
Windom Eagles Model Airplane Club

1. You will receive a body. You may like it or hate it, but it's yours for the entire period.

2. You will learn lessons. You are enrolled in a full time informal school called "life".

3. There are no mistakes, only lessons. Growth is a process of trial, error, and experimentation. The "failed" experiments are as much a part of the process as the experiments that ultimately "work".

4. Lessons are repeated until they are learned. A lesson will be presented to you in various forms until you have learned it. When you have learned it, you go on to the next lesson.

5. Learning lessons does not end. There's no part of life that doesn't contain its lessons. If you're alive, that means there are still lessons to be learned.

6. "There" is better place than "here". When your "there" has become a "here", you will simply obtain another "there" that will again look better than "here".

7. Other people are merely mirrors of you. You cannot love or hate something about another person unless it reflects something you love or hate about yourself.

8. What you make of your life is up to you. You have all the tools and resources you need. What you do with them is up to you. The choice is yours.

9. Your answers lie within you. The answers to life lie within you. All you need to do is look, listen, and trust.

10. You will forget all of this.

From the Long Island Aero Radio Society, Bohemia, New York
The Secrets Behind Building and Improving ARF Models
By Jim Soque

I would like to contribute certain ideas of how to make your ARF airplane more signature and a better built ship. More familiarity with your model will only improve your piloting skills and increase your confidence as a flier. In more than six months, I have completed the following five ARF models: Great Planes Lancair ES 60, Great Planes Cessna 182, Jim Dymond Tiger Moth 120, Seagull Models PC-9, and the Kangke Monocoupe 60. These are all well-manufactured ARF airplanes, each having been tested by countless design pilots, and manufacturer experts. I fly them all with great confidence and have the utmost respect for each of their designers and engineers.

The suggestions I make in this article are my own and from my own experience:

- Read your instruction manual from cover to cover, then read it again.
- Take inventory of all the parts listed in the instruction manual.
- Measure the engine mounts; change them if you think they are too short.
- Mount the engine to the engine mount with socket-head screws, washers, lock washers, and lock nuts.
- Use a ball-link for the carburetor pushrod link on the engine.
- Change the tank to one you are familiar with.
- If a third tube is used for fuel-filling purposes, use additional hose and a clunk.
- Trim the cowl with a router/sander tool, and use a vacuum cleaner with hose to vent the fiberglass dust away from you.

Tech. Editor's Note: Best if this is not done in an enclosed space. No one, not you or anyone in your family or your neighbors, need to breath this dust.

- When drilling the holes in the cowl, enlarge them using a drill bit wrapped with some 220-grit sandpaper; enlarge gradually.

- Attach a flexible pushrod material to pull the fuel hoses forward through the firewall.
- Cut the ventral vent hole three times the size of the air intake hole. This allows for maximum cooling of your engine.

- Measure the stabilizer tips to a center point over the cabin using an aluminum ruler and take note in centimeters, not inches. Measure twice and always use epoxy.

Tech. Editor's Note: Do not use any string, line, cloth measuring tapes, or anything flexible to measure with. If the measuring device sags or bends, support it so it is straight over its length.

- Level any imperfect surfaces with your eyes, then put a level on it. Take away any balsa gradually with a hobby knife.
- Use a 90° angle device for your vertical fin, or try a laser leveling device.
- If your kit comes with 2mm or 3mm hardware, switch it to 2-56 or 4-40 hardware instead.
- Change the supplied wheels to wheels with tread. Don't use cheap wheel collars.
- Use a hinge-slotting tool (I prefer electric) to widen the precut hinges on control surfaces. Use slow cyanoacrylate glue on the hinge surfaces edge, then insert the hinge.
- Z-bend the links for the control rods at the servo arm end.
- Mount your cowl with beefier screws and washers.

Tech. Editor's Note: Reinforce the part of the cowl where screws or bolts go through. Use a small piece of cloth soaked in epoxy and placed on the inside of the cowl or any other part that needs reinforcing. Fiberglass cloth is a good choice but any woven cloth will do.

- Mount your switch harness and charging jack opposite from the exhaust side of the aircraft.
- Use a glow-extension device for any inverted engines.
- Use scrap fuel line pieces to secure your clevises.
- Tape any servo extensions to the servos main wire for insurance.
- Run the antenna wire inside the fuselage and out the back whenever possible.
- After you finish, test run your engine, high and low end, before coming out to the field.
- Fully charge everything before packing it up and heading to the field.

PROPELLERS

Deciding on the correct construction, size, style

By Joe Finkelstine

Skymasters Radio Control Club – Lake Orion, MI

The first thing I need to argue is that our propellers could be thought of as similar to the wing on our airplanes. Our wing produces lift by moving through the air, and our propeller creates lift by revolving. If you take a close look at a propeller, you should notice that they have an airfoil shape, just like a wing. At the risk of sounding elementary here, the lift produced by our propeller is more commonly referred to as thrust, and it is what provides the force to move the airplane forward.

Our hobby provides us with an enormous selection of propellers in terms of construction, size, and even style. In particular, over the past few years, I have noticed a much larger selection of propellers specifically engineered for electric flight.

I get the most questions as to what the numbers on a propeller mean. Two numbers classify all of the propellers I am aware of, one being the propeller diameter (length from tip to tip) and the second being the pitch of the propeller. The two numbers usually are listed on the propeller by diameter, then pitch. For example, a 13 X 9 propeller has a diameter of 13 inches and a pitch of nine inches.

The propeller's pitch is a theoretical number in practice. In an ideal world, where the propeller would not slip or have any drag, the pitch represents how far forward a propeller would travel in one revolution. Given our 13 X 9 propeller, the nine means that if I put in some kind of fluid or special air and turned it exactly one rotation, it would move forward nine inches.

Both the diameter and pitch are important as we decide which propeller to use on our model. It often is confusing, particularly to beginners, as to what to choose for a new model. The "right" propeller depends on a number of factors:

- 1) What load the propeller places on the engine
- 2) The model's desired forward speed
- 3) The model's desired acceleration
- 4) Noise considerations of the propeller
- 5) The material the propeller is made of

Every propeller will take effort for an engine to turn, and the amount of effort to turn the propeller is called load. One way to quantify the load is to multiply the two numbers (diameter and pitch) to get a "load factor". This number by itself is meaningless, but it is useful for comparisons of propellers of nearly the same size and diameter. Engine manufacturers often will list more than one propeller for an engine, and if you compute the load factors for the entire family of recommended propellers, the load factors will be clustered together. You can then see if a propeller that is not listed has a load factor in the range defined by the recommended propellers.

The real test for load factor is what rpm the engine will want to turn the propeller at full throttle. If the propeller load factor is too small, the rpm limit of the motor may be exceeded and you'll be back at the hobby shop complaining that the engine made a big clanking sound and then quit running (the clank was your connecting rod breaking in half). On the other hand, if the load factor is too high, the engine will be overloaded, will almost certainly overheat, and will not have much pulling power. The chosen propeller must allow the engine to stay within its recommended rpm range.

Most of my experience is in four-stroke engines and for me, that means whatever propeller I chose, I must ensure my small to medium four stroke engines never tach over 10,000 rpm on the ground. The wide open rpm value also is important in how much sound the propeller makes. Of all the things you think about when trying out different propellers, correct loading is the most important.

The second major issue is the trade off between top end speed and acceleration. Let me start with a generalization. Pitch affects top end speed and diameter affects acceleration. There is a direct trade off for each propeller and which one is right depends on your style of flying and the type of airplane you're flying.

Let's use my Dave Patrick Ultimate biplane as an example. This biplane is highly aerobatic and I spend a lot of time tumbling it through the air in and out of stall. The ability for me to accelerate from near zero to climbing speed is far more important than how fast the airplane goes at full throttle. For this reason, I chose the largest diameter propeller

that the engine (a Saito 180) could handle. The fliers who like very fast models choose the other end of the spectrum and go for as much pitch as possible.

Sport models are a compromise between the two. Many of the aerobatic Almost-Ready-to-Fly (ARF) airplanes are quite specific on the maximum pitch to use because the designer made the model to be highly maneuverable and flying this type of model usually induces flutter. At the moment, I am drooling over a Dave Patrick Edge 540, and he mandates no more than an 8 inch pitch on the propeller. I will use a Moki 1.8 on this ARF, allowing me to fly an 18 X 8 propeller. I may try a 20 X 6, but I'm concerned this will overload the Moki.

If you stay with a propeller that does not overload or underload the motor, the only way I know to select the propeller for acceleration versus top end speed is experimentation. Try out different propellers. For smaller propellers that only cost a few dollars each, this is relatively painless. When you get into propellers with diameters exceeding 18 inches, it gets expensive, so I use the time honored tradition of borrowing different propellers to test flight characteristics.

The last factor I use in propeller selection is noise. Unbelievably, propeller tip noise often can be the largest contributor to the noise our models make. In particular, when the tip speed of the propeller is at or over mach .75 (yes that is $\frac{3}{4}$ the speed of sound), the tip noise generated will be quite large and over our limit almost every time. There is a simple formula for finding the rpm for a given propeller diameter at which the tip speed is mach .75 and it is: $RPM_{max} = 190,000/D$. Where RPM_{max} = the rpm at which the tip speed will be mach .75 and D = diameter.

Consider a sport two cycle, .46 size engine. A common propeller for this type of engine might be an 11 X 6. A sport .46 with a recommended propeller would almost certainly never tach out above 17273 (max from the formula), but I have seen the Pylon racers and the original Mvvs engines tach this high. For most of us who fly sport, we will not bump up against these numbers. I will comment though that many engines I use and swing propellers in the 20 to 24 inch range can easily reach the maximum rpm.

The final selection criteria discussed above also is concerned with the material the propeller is made of. At our field, the two most common propellers are either wood or a composite (APC or Master-Aircscrew). The wood propeller is a little safer. The two primary disadvantages to wood propellers are their fragility (one nose over and they're finished) and their noisiness.

Composite propellers also have advantages and disadvantages. Primarily, they are more accurate in terms of pitch, pre-balance, and efficiency. I have experimented with this on several occasions and can say that if I take wood and APC propellers of the same diameter and pitch, the APC will turn more rpm on the same engine and appear to be quieter. One of the biggest dangers of APC propellers, however, is they are razor sharp and can cause more damage to your fingers. If you're standard landing technique includes nosing over, the APC propellers are the way to go.

In the end, one of the best methods when you start liking for a propeller is to watch and ask. Look for a similar model at the field and observe how it flies. Ask the owner which propeller he or she is using. If it is an aerobatic model, watch how it accelerates and how it behaves full throttle. I also have found the Radio Control boards on the internet to be helpful. Hope you are already making balsa dust for next flying season.