

Prop Kicks



The Official Publication of the Cloud Kings R/C Club

Charter Club # 579

WINTER BUILDING EDITION

February 2007

President's Letter

As I write this, we're getting the first real blast of winter so far, with plenty more to come. Now's time when I start daydreaming of warm summer afternoons at the field. Hopefully you have building projects underway to get you through, or are at least checking over the planes in your hangar for safety and to do those fixes and upgrades you put off last summer. Cycling batteries and putting after-run in motors is a good idea as well, and will help ensure things are in running order when the weather turns nice. Below is a photo of my latest project.

The 3rd Annual Southeastern Keystone State R/C Sale and Auction (that's a mouthful!) will be next held next Saturday, February 10 at the Oxford Redmen Pavilion. Dick Plyler has really done a great job with this and we expect a large turnout. I plan to go and turn some of my old R/C stuff into cash, which is a great way to fund even more stuff!

Right after that is our next meeting, which is an important one to attend. We will be holding Officer elections, and as you probably know, we will have some turn-over this year. I am stepping down after six

years as a club Officer (where did those years go?) as are Henry Bohe and Dick Martin. I want to personally thank Henry and Dick for their years of fine service and I think we all should show our appreciation for people who make an extra contribution. We're still looking for people who are interested in serving the club by volunteering to be officers, so please consider doing this - the pay isn't great, but there are other rich rewards!

At the meeting we will also be revisiting the subject of dues. If you have an opinion about this, the meeting is the place to make it known. As a club, we can adjust the dues up or down as we see fit. Finally, we need to start planning for the year ahead, since Spring will be upon us before we know it. Stay warm, and I hope to see you at the auction and meeting.

Regards,
Mark McQuaide
President, Cloud Kings R/C Club



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“ Last Meeting”

No new members at the Dec. meeting.

and Prospective members:

Ernie Smith, sponsored by his father Paul Smith.

Bob Scott, sponsored by Bob Taylor. Believes he may be the first President of Delaware RC. He has a Life Membership to AMA.

Next Meeting: Feb 13, 7:30 PM at West Grove Fire Hall
Remember, dues increase, \$65, due at the Feb. meeting latest.
Also, remember to renew your AMA membership.

Election of Officers will be held at this meeting.

Sale/Auction- February 10, 2007 Doors open at 9AM
Please visit our Web Site for more details, or call Dick Plyler at 610-268-2156

Cloud Kings Air show and Fun fly: Scheduled for June 23 2007 at Harris Field

“Flying in the Wind”

By Bill Vandenberg

It's a beautiful summer day. My planes are all charged and I'm looking forward to a nice afternoon of flying with my buddies at West Field. Just before I leave the house, I notice the trees swaying, indicating a moderate wind. No flying today, as I silently curse the wind under my breath, I go mow the lawn, wash the car, and catch up on my honey-do's. Another day lost due to that evil weather phenomenon called Wind. But, does it have to ground me? Not always, as I'll attempt to explain.

What we feel as wind is nothing more than the movement of large air masses associated with a frontal zone. The speed of the wind is determined by the pressure gradient between the two air masses that are on either side of the front. If the gradient is high, expect high winds for one or two days after frontal passage. If the gradient is low, expect lower winds. There are many other factors that affect wind speed, but to explain them all would exceed the scope of this article.

First, let me say that your experience level will determine how much wind you'll be willing to fly in. Flying outside your comfort zone can result in loss of aircraft. Obviously, a heavier aircraft tolerates wind better than a lighter one. Also, an aircraft with a high wing loading will perform better in the wind. Set yourself some personal wind speed limits and don't fly above them.

There are two kinds of wind, *steady state* wind and wind *gusts*. Gusts are usually caused by the instability of the air mass you're trying to fly in. Gusty conditions are not kind to model aircraft, due to their inability to withstand and cope with wind shear. I'll

fly just about any of my aircraft up to about 20 mph of wind. If the gusts are higher than 10 mph, I'll stay on the ground.

A 20 mph wind blowing right down the runway causes me little concern for take-off and landing. The aircraft will have a shorter ground roll on take-off, and will appear slower than normal on approach. What you're seeing from the flight line is the groundspeed of the plane, not the indicated airspeed. Also, keep your plane upwind during most of the flight, if the engine quits and you're downwind chances are good you won't reach the field.

Let's turn to take-off and landing in a

crosswind. Take-off with a 90 degree crosswind can be tricky. The wind will try and weathervane your plane, so use whatever rudder control is needed to keep tracking straight. I usually hold a little aileron into the wind. If the crosswind is blowing from the left, hold a little left stick in to prevent the upwind wing from rising when the plane leaves the ground. This also prevents the plane from drifting during climb-out. Landing is best accomplished with a slip. On final, lower the upwind wing enough to cancel any drift, while adding opposite rudder to keep the nose pointed along the runway. Level the wings and center the rudder shortly before touchdown. On a side note, I never use flaps, (if equipped), during a crosswind approach because the flaps

lower the stall speed enough to cause loss of control if a gust is encountered.

A friend from the old Chester County R/C club moved to Chicago a few years ago. In a later correspondence, he told me that if he hadn't learned to fly in the wind, he would never fly. Another friend in our club, Darren Kauffman and I were out at West about a month ago on one of those nice January days. I had my little electric BD-5 along, but after seeing the wind conditions at the field, I decided not to risk it. Darren had his .40 size low-wing tail dragger out and decided to try it. His take-off roll was about 5 feet, and his flights were without incident. He invented a new maneuver I named the "Kauffman". He'd pull up rapidly into a vertical climb, and his plane would almost hover in one spot, while moving about 20 mph downwind with the nose pointing straight up. I wish you could have seen it, it was hilarious! His landings were almost at zero ground-speed. Darren proved that flying in fairly high winds was possible, and a whole lot of fun.

This article was not written to encourage anyone to fly when they're not comfortable in doing so. In my 30 plus years of flying models, I've probably doubled the amount of flyable days each year by not fearing the wind, but having a healthy respect for it. And being a former pilot, I fully understand the effects of wind on my aircraft.

Just a reminder, our next club meeting is February 13th at 7:30 p.m. at the West Grove Fire Hall. Officer elections will take place. Please try to attend.

“ Building Tips and Tricks”

By Bruce Ginn

For most of us the success of our latest build is measured when the plane flies and returns to Earth in the correct number of pieces. We accept control surface trim (misalignment) as a part of the process required to have our planes fly somewhat straight although we sometimes find that other flight characteristics are not as good as we would like. Things like turning in one direction better than the other, poor rolls, loops, vertical lines or stall characteristics.



Maybe if we could build our planes a little straighter and aligned more accurately they would fly better. I am by no means an expert but have found through some of my contacts with expert builders a few tools and tricks.

In order to build a fuselage most of us tack the plans to a hollow core door or some other reasonably flat surface and start to lay out the pieces over the plans, hoping the paper didn't shrink and remains straight. In order to build a precise aircraft, I have built a fuselage jig to keep the layout straight using lasers for my reference lines and builders squares mounted to the jig to clamp the fuselage sides and keep them vertical to eliminate any twist.

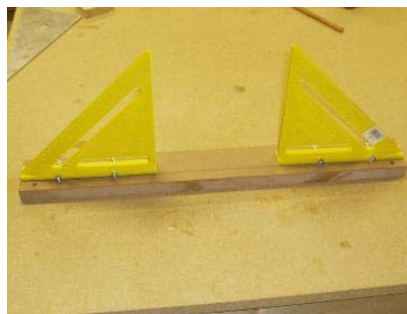
I started with a solid bench with leveling bolts in the legs and placed a 2'X8'

piece of MDF (medium density fiber) board on top. The MDF was marked with a straight line down the middle, and then added 2 unistruts (available at Home De-



pot electrical dept.) bolted down close to the edge of the work surface and parallel to the center line. These help stiffen the jig, resist bows in the work surface and allow adjustment of the alignment stations. Small wedges were used between the bench and MDF to eliminate any small deviations. I now have a building surface that is as flat as I can measure.

The stations were built from 3" wide



MDF to span the unistruts. They are held to the unistrut with 1/4" bolts screwed into small pieces of hardwood which are drilled and threaded. This allows the station position to be adjusted as needed for the project. My jig has 9 stations to accommodate a long fuselage.

Builders squares are mounted on the sta-

tions and held on the sides by screws threaded into the MDF. They can be adjusted to the width of any fuselage I plan to build.



The lasers (available for about \$15 each) are mounted on pedestals at both ends of the jig to shoot down the centerline. Some people are still using string lines tied to a vertical rod at both ends of the jig, which works too.



Each fuselage former will be marked with a center reference, which will be aligned

to the center and squared before gluing everything together. Using the laser center line and a protractor the F1 former can be set to build in the correct right thrust angle. With any luck I will end up with a straight plane with no twist in the fuselage. This will put the horizontal and vertical stabilizers in proper alignment with the wing.

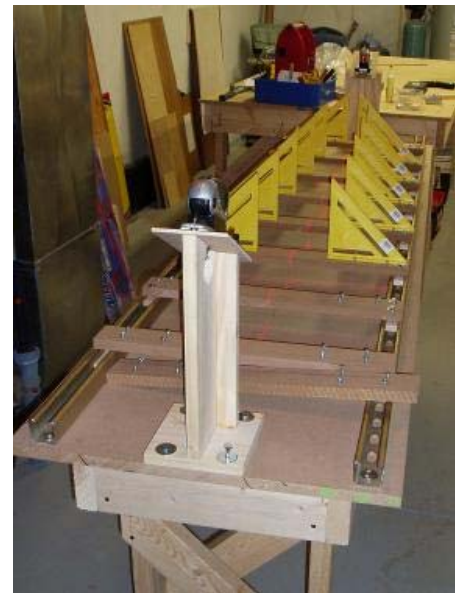
Although my interest is pattern flying, most of our sport airplanes could benefit from some careful alignment and trimming.

If anyone is interested in building a fuselage jig there are a few sites online to get some hints or you can check this one out. Just give me a call. Check online at <http://webpages.charter.net/rcfu/ConstGuide/FJConstr.html> or <http://petesrc.home.comcast.net/jig.htm>

I will describe more of my gadgets as project Black Magic progresses.

I know we have some good builders in this club and I would like to know what tricks you have which might help us all

build better airplanes. Please submit your Tricks & Tips to Pete Jones for addition to the news letter.



“Electrifying News”

By Sparky

Well, I’m back again. Sparky’s been thinking about RC electric motors and wondering what all those published specifications mean. Quite frankly I’m a bit puzzled, but let’s see if we can’t figure it all out. We’ve already talked about wattage and how to determine just how many watts our motor would need to get the job we have in mind done. That was fairly simple, so even I could understand it. However, I’ve seen some rather cryptic engineering notations posted among the motors specification, and I just got’ a know what they mean. Here’s what’s got me stumped; Kv & Kt - hum...
These are important brushless-motor specs. The constant Kv is the rpm produced by a motor per volt applied, and the constant Kt describes the

torque generated by the motor for a specific motor current. The K symbol represents a mathematical constant and is not to be confused with the term Kilo (abbreviated K also) meaning a 1000. In our case often confused with KV meaning Kilo-Volt. Ok, having gotten this far let’s try to explain it a little further.

Kv is the motor voltage constant expressed as the ratio of (rpm/volt). This indicates how fast the motor will turn for a given voltage. As an example, a given motor is rated at 3,500 Kv and a 7.2 volt battery is used, the rpm would be (volts x Kv) = 25,200. The equation (Kv = rpm/ volts) can be used to find any of the three variables by simply transposing any of the terms if the other two variables are known. Therefore, (Kv = rpm/volts), (rpm = volts x Kv) & (Volts = rpm/

Kv).
Kt is the motors torque constant expressed as a ratio of ounce-inches of torque per amp of current (oz-in/ Amp) or (t/I) = Kt. This number is the amount of torque a motor produces per amp of current drawn. As an example, if a given motor is rated at 0.55 oz-in and draws 4.5 amps, it would produce 2.475 oz-in of torque (0.55 x 4.5 = 2.475 oz-in of torque). Therefore: Kt = 2.475
In a nutshell the bigger the Kv and Kt numbers, the more speed and power you have!
This has just been a broad-brush overview. Although there are a few more sodalities involved this should serve as a good starting point. We will explore this topic further in our next news letter - stay connected!

“Election Update”

By Bill Vandenberg

Fellow Cloud King Members, I have recently been informed that two gentlemen who were going to run for Vice President and Treasurer have decided to withdraw their nominations. Here's what I have so far:

President: Bill Losey and Bill Vandenberg

Vice President: Brian Porter, Alvin Johnson

Treasurer: ????

Secretary: Tom Lauletta (Incumbent)

Personally, I would like to see two nominees for each office. If you have any interest in either the V.P. or Treasurer position, and have been a member for over one year, please contact me. Thank you for your consideration of this matter.

The election will be held by secret ballot and I promise the election will use “chad free” ballots.

Bill Vandenberg

“3rd Annual Southeastern Keystone State R/C Sale and Auction”

By Pete Jones

I attended last years' auction and really don't know how to digest the result; attendance was down, likely due to the sudden change in location, and the bad weather didn't help any either. Regardless of that, I was really surprised by the amount these airplanes will bring as it was not very much. I'm happy about it in one way because you can buy something and not empty your wallet, on the other hand if I were to take some of the planes that I am through with, you

know, moved on to something else, I won't get very much for them. I really don't think I could expect a bunch for my stuff, you know, it's been “put through the mill” and I have certainly got my moneys worth out of them. I suppose they would be a nice starter plane for the next guy without spending a fortune.

Things I like about the whole set-up is that you can see what you are purchasing and in most cases you can get a good story, the history, or perhaps good details of how a plane was built.

That being said, I highly recommend you come out to the sale/auction as bargains there are and they are there



File photo

39th Annual WRAM Show:

Saturday, February 24th, 2007 Delaware R/C Club

Annual Bus Trip

Leaves From Churchman's Crossing Park and Ride across from Christiana Hospital

at 7:30 a.m. and returns at 6:30 p.m.

Cost for bus fare \$35

WRAM admission Adults \$12

Questions?

Call Dick Stewart 302-368-2911 or Dave Moyer 302-376-0404