KCAM FLIGHTLINE

A RADIO CONTROL MODEL AIRPLANE CLUB

A Charter Member of AMA Since 1968 Member No. 198

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KENT COUNTY AEROMODELERS NEWSLETTER JUNE 2009

JULY EVENTS

Your Attention Please

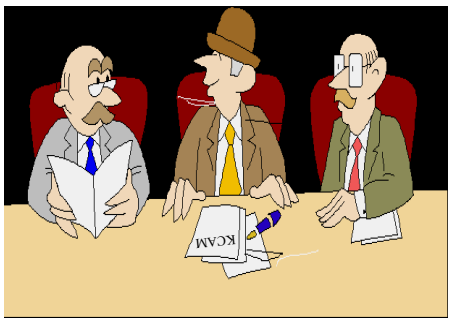
The General Membership Meeting for 7 JULY AND 4 AUGUST will be at 7:00 PM instead of 7:30 PM at KCAM FLYING FIELD. Please make a note of it. This was voted on and approved by the members present at the June Meeting.

The General Membership Meetings will again be held at 7:30 PM when we return to MMC in Sept.

15th Board of Directors Meeting cancelled, due to General Membership meeting and Board of Directors meeting so close together

15th Monthly Breakfast will be at Kirby and Holloway Family Restaurant HWY 13 Dover at 8:30AM

19th Fun Fly # 3 1:00PM at Beautiful Sandtown Flying Field.



Highlights
Of
General Membership
Meeting

Treasurer

Lee Messick. Treasurer's report was given.

Safety Officer.

Donald Vincent. Reiterated from MAY Meeting about a couple of incidents involving Spinners coming off. No one was hurt. Also about observing and obeying the safety/pilots line.

He also talked about a **very important item.** The use of verbal signals while flying. Telling other participating flyers of your intentions, i.e., ask if the runway is clear for you to take off. A pilot may be landing. Announcing you are on the runway, if your airplane is stalled and you are attempting to retrieve it. Call out your intentions if you are preparing to land. Call going around if you have a missed approach.

These are a few of the things and I am sure there are others. It's too late after something happens and you say I thought you knew I was doing so and so. Make your intentions known in a strong voice.

From the **President**

A Big Thank You to the **Field Chair** Nick Nicholson and his helpers. Merritt Brown, Albert Mills, and Patrick Breslin, and John Opsitnik when needed

THE PRIZE

Here it is folks, the You Can Do Model Airplane. That is Bill Suter who did all the work on this enterprise. Buying the airplane, (using club money) building it, checking it out, making sure it is ready to fly; you only have to add fuel, for some lucky winner. Raffle tickets are on sale for $10.00 each. The winning ticket will be drawn during the KCAM OPEN HOUSE September 27th at Beautiful Sandtown Flying Field. Good Luck everyone.

This goes back a ways. The Club gives a Great Big Thanks to the people who came out and helped clean the road. There were seventeen people participating. This is a worthwhile endeavor, not only is it one of the electives which qualifies the Club for the AMA Gold Leader Award. It also puts us in a good standing with the local residents.

CORN, CORN AND MORE CORN Everywhere

Boys and Girls we are surrounded by corn. Can't blame the farmer for planting it.

Lee Messick brought up a subject that should be of interest if you have the misfortune of crashing in this corn. It is almost impossible to find a downed aircraft without the help Lee talks about. It involves having a long pole with a flag attached which can be seen above the corn, and two walkie-talkie radios.

This is the procedure to find your aircraft. As soon as you see your aircraft disappear into the corn immediately lay your transmitter on the ground with the antenna pointing in the direction in which you last saw your aircraft.

Now the use of a long pole with a flag attached and two walkie-talkie radios comes into play. A person with a long pole and a radio will walk into the corn in the direction of the downed aircraft. Another person with a radio will watch the pole and keep the pole carrier in line with the downed aircraft.

Another item Lee brought up was the poles we have are heavy and they get very heavy if you are carrying one though the corn for any length of time or distance. So Lee proposed to look for some lighter poles, buy them and present them to the Board of Directors. A motion was made and carried, for Lee to do same.

At the Board of Directors 17th 0f June, Lee showed the Board the two poles he found. They are lightweight. One cost $8.00 and is 14 ft long. Another one is 16ft and cost $9.00

The poles telescope to their fullest length but Lee says the poles can be bent and placed in the shed their full length.

I don't have a clue as to what these fishing poles are made of but they will serve the purpose they were bought for very well.
Thanks Lee.

Merritt Brown checked on the walkie-talkie radios and said the radios are working. The batteries are ok. The radios are in the overhead in the shed. Thanks Merritt.

Secretary

Ted Petroulis read the minutes for the May BOD meeting. Minutes were accepted as read, without exception.

There was considerable discussion about the Honor Board of deceased members. A motion was made and carried that all Charter Members names will be placed on the Board regardless if they were members of KCAM at the time of their demise.

There was also discussion during the General Membership meeting and the Board of Directors meeting regarding Honor Board names of non-charter deceased members. There is a lot of work to be done by the Board of Directors and a solution submitted to the General Membership for approval or rejection. Standby on this one.

REMINDER: Club Picnic on Sunday, June 28 at Beautiful Sandtown Flying Field.

Editor's Note: I copied this article from The AMA Archives. I am not too enthused about electric flying because I like the smell of castor oil and the sound of a gas engine. All I knew about electric is what the seller told me when I purchased an electric model. However, I found a lot of good information about electric flying in this article. It makes it simple the way the author explains things. This article is extensive but I think very useful. I hope you find it as interesting and beneficial as I do.

The Basics of Electric Flight

by Pat Tritle
From the Albuquerque Radio Control Club, Albuquerque NM

I really enjoy getting together with clubs and speaking to the group about the basics of electric power. However, because there is so much information that needs to be passed along, it would be difficult, if not impossible, for those attending to remember much of the pertinent information. For that reason, it's better to write up the basic guidelines so that those who are interested in getting into electrics would have the information available for reference at a later date. Here goes. I'll keep the numbers as simple as possible to avoid unnecessary confusion. The numbers in Table 1 are based on models with wing loadings from 8 -16 oz/square foot. As with gas models, higher wing loadings require more power since they must

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fly faster to support the added weight. By the same token, a lightly loaded model with a wing loading in the 3-5 oz/square foot range will fly very well at 25 -30 watts./pound. **Watts a watt and where can I get some?** Wattage is the term used in electric flight to relate the level of power that an electric drive system will produce. To relate it to terms we're familiar with, 746 watts= 1 horsepower. To calculate the wattage delivered by a given system looks like this: amps x volts = watts. So where do these numbers come from and how do I know how many volts and amps are needed to fly a given model? Okay, let's say you want a mildly aerobatic sport model with a 14 oz/square foot wing loading that will weigh in at 2 pounds. We already know that the power requirement for a model like this is about 70 watts/ pound, so we're going to need to generate about 140 watts. Let's assume that you are going to use an eight-cell Ni-Cd battery. At 1.2 volts per cell, eight cells will deliver 9.6 volts. To arrive at the necessary current draw to achieve 140 watts, simply divide 140 (watts) by 9.6 (volts) and you arrive at 14.58 amps. Now, let's assume that you have a three cell Li-Poly battery for the model, which is rated at 11.1 volts. The formula is the same; 140 (watts) divided by 11.1 (volts) = 12.6amps. As you can see, as the available voltage increases, the lower the current draw needs to be to deliver the necessary wattage. Now here's something to consider when selecting your system: the higher the current draw, the shorter the flight duration on any given battery. Therefore, the ideal setup would be to use a higher-voltage battery with lower current draw for maximum duration. On the downside, when using Ni-Cd and NiMH batteries, as the cell count goes up, the weight will increase significantly as well. It works that way with Lithium too, but Lithium batteries are dramatically lighter then the old "round" cells. Okay, let's say we're going to use an 11.1 volt Li-Poly battery. All we need to do now is select a motor that will swing enough propeller at 12.6 amps to fly the model at a top speed of around 40-45 mph and we're in business. Now that you know the parameters, visit your local hobby shop and select a motor that fits that description.

Gear Drive vs. Direct Drive: Why is one better then the other?

Well, it all depends on the kind of performance you're looking for. If you're looking to go fast, go with direct drive. Going fast requires a high-pitch propeller turning high rpm. The formula to calculate propeller pitch speed is an easy one; it looks like this: rpm x pitch (in inches)/1056 = mph. Let's say that you are turning a 7-6 propeller at 14,000 rpm.14,000 x 6 = 84,000/1056 =79.55 mph Now, let's assume you are setting up a slow, relaxing park flyer with about a 5 oz/square foot wing loading. If we swing a 9-7 propeller at about 3,500 rpm, we'd be looking at a top speed of roughly 23 mph. To swing that much propeller with a small, light drive system, we would use a gear drive unit at a very low current draw and a small, light battery. Again, to make a known comparison, We can relate all this to riding a 10-speed bicycle. A gear drive swinging a big propeller is like riding your bike in low gear. You pedal like mad with little effort, you don't go very fast, but you can climb steep hills with ease. The direct drive system could be compared to riding the bike in high gear. It'll really go fast, and even though you're pedaling slower, it requires considerably more effort. What all this boils down to is "propeller disc- loading." We all know what wing loading is: it's the amount of the model's weight that each square foot of wing must carry. Prop disc -loading works the same way. A large propeller will be more lightly loaded, thus delivering more torque then a smaller propeller turning high rpm. The tradeoff, of course will be speed One more thing to cover and we'll give you a rest. Batteries are rated in "voltage" and "amperage." Voltage dictates the amount of power the battery will deliver. The amperage rating dictates for how long the battery will deliver that power. To relate that to glow fuel, consider the voltage as nitro content. High voltage (nitro) means more power. The amperage is related to the quantity of fuel, or simply the "size of the tank. "To figure the size of battery needed, let's go back to our 140-watt sport airplane. If we're pulling 14 amps from a 1400 mAh(1.4 amp hour) battery, we will have full power duration of five to six minutes. In the real world, with proper throttle management, you'll see flight times of approximately 8 minutes

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The amperage is related to the quantity of fuel, or simply the "size of the tank."To figure the size of battery needed, let's go back to our 140-watt sport airplane. If we're pulling 14 amps from a 1400 mAh (1.4 amp hour) battery, we will have full power duration of five to six minutes. In the real world, with proper throttle management, you'll see flight times of approximately eight minutes. These are common flight times, even with liquid-fueled models. To arrive at that number, divide the battery amp rating by the current draw:1.4(amp hours)/14 (amps) = 0.1. Then take 60 (minutes per amp hour) x 0.1 = 6 minutes. Now, to double the duration, you must either cut the current draw in half (to 7amps), or double the battery size (to 2800 mAh or 2.8 amp hours)—again we see trade offs. To reduce the current draw, we can use a larger, higher-pitch propeller turnings lower with very little weight penalty. If we double the size of the battery capacity, the weight penalty is quite high unless we go over to the new Lithium batteries in which we will discover we have benefited from a tremendous weight reduction, but at a higher price then conventional batteries.

Okay, I promise I'll quit before we all end up in "system overload." Once again, here's a tremendous amount of information here for a newcomer to electrics to digest, so let's do this: if you have specific questions about setting up an electric model, please feel free to drop me a line (patscustommodels@aol.com) and I'll do what I can to steer you in the right direction. For now, I'll offer up one last piece of advice. To get started, work with a known good design, and use the equipment that has been proven to work. Talk to the people who are successful and copy what they're doing. The one thing I do know about modelers is that they are always willing to share their knowledge with those interested in what they are doing. □

TABLE 1

Basic power needed to fly an electric model

Direct Drive Systems
60 watts/pound

Gear Drive Systems
50 watts/pound

Mild Aerobatic Performance
70-80 watts/pound

All-out Aerobatics
100-110 watts/pound

3-D Performance
150 watts/pound or more