

Prop Kicks



The Official Publication of the Cloud Kings R/C Club Charter Club # 579

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December 2007

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President's Corner

The Vintage Fly-In was a real blast from the past. A truly unique event, and thoroughly enjoyed by all in attendance. The general consensus among the membership is that we should add this to our list of annual activities – I agree.

Our Christmas Dinner has been postponed until December the 15th when we hope the weather will be more accommodating. I hope to see you all there to enjoy the food, fun, and fellowship.

I believe this has been a stellar year for the Cloud Kings. Many new flyers have been added to the club membership. Most of these have become active pilots enjoying the thrill of flight – some for the first time. If this year was good, next year should be better yet!

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We have hosted eight events this year, four of which were new activities. All the activities are listed below:

Freeze Fly – News Years day
February, Flea Market – Oxford, Pa.
Spring Fling Picnic – West Field
Annual Fun Fly – Harris Field
Fall Picnic – West field
Model Aviation on display – Oxford Carnival
October Vintage Fly-In – West Field
Christmas Dinner – Nottingham, Pa.

New things are already on the drawing board for 2008.

All of the previously mentioned events
Club Combat competition using (Gremlins)
Lots of new Electric Stuff

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New Members:
Bill Brueckman

Next Meeting: December 11th, 7:30 PM at West Grove Fire Hall

Prospective members:
Dan Crawford is being sponsored by John Hoopes
Dick Barnett is being sponsored by Bob Fling
Steve Andrew is being sponsored by John Andrew

CloudkingsR/C :Dinner Party Dec 15, 1pm

“Presidents Corner continued”

In our next meeting on December 11th we will nominate the officers for 2008. The *Election of new Officers* for 2008 will take place in our February 12th 2008 meeting. Needless to say these are very important matters and every member should be in attendance at these meetings.

I have often heard it said, “I’m not interested in the politics of the club - all I want to do is just come out and fly!” Yeah, Me too, however it takes a lot of somebody’s hard work and diligence to keep the wheels of the club well oiled and turning smoothly so the rest of us can continue to enjoy the benefits of their labors. The very least I would expect from the membership is that we all come out to these next two meetings, to decide and support those who will be you next officers. Seems reasonable to me – what do you think?

Additionally at our next meeting we will be ask to vote on a change to the club bylaws. I have asked the News Letter editor to print that change in this addition of the News Letter so you can review it before our next meeting. Is it a good or bad idea? You, the members will have the deciding voice.

I will not be seeking the club presidency for 2008. All the good things that happened this past year were the result of the ingenuity and hard work of the membership, therefore it is a forgone conclusion that the club will continue to go forward successfully as it has in the past. It has been my honor and pleasure to serve you this past year – Thank you!

I wish you all the best of holidays, as we reflect on wonder of the Incarnation, and ponder the prospects of a new year. May God’s blessing be on each of you.

Your President, Bill Losey

“Bylaw Change Proposal”

The following proposal would replace section 3.4 of the bylaws. Please review and bring your discussion to the December meeting. A vote will be taken at the December meeting on this proposal.

Existing Bylaw:

3.4 Officer Nomination

Officers for a new year will be nominated at the last club meeting of the previous year. A committee appointed by the club president will nominate the officers, although any club member may also do so.

New Proposal:

3.4 Officer Nomination

- Those members who desire to serve as a club officer for the upcoming year must personally submit their name for nomination to the Secretary. No other method of announcing a candidacy will be permitted.
- The nomination period will begin with the October meeting and continue until the first meeting of the New Year.
- At the first meeting of the New Year, after having exercised reasonable care in ensuring that all interested members have had the opportunity to place their name in nomination, the Secretary will close the nominations. No additional nominees will be accepted after the nominations are closed.

“CloudKingsR/C Dinner Party”

All Club Members:

We postponed the Christmas Dinner from Dec. 2nd to Dec. 15th which is Saturday at 2:00 pm with a social hour starting at 1:00 pm. This was done due to the weather forecast for ice and freezing rain. I am

hoping that those of you that signed on for the original dinner will be able to attend the rescheduled one and I will assume that to be the case unless I hear from you. Members that did not sign up for the original date can attend the 15th, but give me a call at 610 268 2156 and let me know. We

have 43 signed up and unless I hear from you by Friday, Dec. 14th at noon I will assume that you are planning to attend. I am looking forward to a good time by all.

Dick Plyler

“Sale and Auction”

Henry Bohe and Dick Plyler informed to the club, that due to an increase in the hall rental and magazine advertisement fees the Cloud Kings R/C sale and auction has been cancelled. Dick is working on organizing an outdoor tailgate/flea market, sometime in April, at West Field. There will be cost for a parking space/table setup. No flying will go on during the sale. More information will be transmitted as the details are worked out.

“Electrifying News”

By Sparky

I hear people thinking (yes, Sparky reads minds) about just what’s happening when we’re charging those flight pack batteries. Let’s put on our thinking caps and see if we can’t figure it out.

First we’ll need to understand what’s going on when the battery is being discharged, which would be the case when it’s in use during operation of our models. The battery is like a sponge that spokes up electrons while it’s being charged. The ampere rating of the battery is an indication of how many of these electrons it will hold. Therefore, the higher the ampere rating the more holding capacity the battery has.

During discharge those stored up electrons flow *out of* the **negative** wire (the **black** lead) then pass through our electronic equipment (servos, and radio), then travel back *into* the battery through the **positive** wire (the **red** one).

So, you’ve used up all the energy stored in your battery, and it needs to be recharged. Of course you’re going to connect it to your charger, right? At this point it should be mentioned that no matter what charger you’re using the charging process will remain the same. Think back to the explanation of discharging your battery; *inside the battery* the electrons flow into the **positive** terminal and pass through the battery emerging at the **negative** terminal. Now why did I tell you this? It’s because in order to recharge your battery you need to make the electrons go the other way through the battery. So when you connect up your charger the **positive** charger wire is connected to your battery packs **positive** terminal, and your charger’s **negative** terminal is connected to your battery packs **negative** terminal. Don’t we connect the **red** charger wire to the **red** battery wire, and the **black** charger wire to the **black** battery wire? This setup caused those electrons to reverse direction *inside* the battery during the charging cycle, filling up that empty battery.

You say you want to know more? Obviously (or not so obviously) your charger applies to your discharged battery a voltage slightly higher than the fully charged battery pack voltage. As the charge in the discharged pack raises the amount of current (electrons) going in decreases, and its voltage rises, and in time will equal the voltage being supplied by your charger. Because of the voltage difference between the battery pack and the charger is then very small or zero, no more charging current (electrons) will flow – Presto your pack is charged up!

“Electric Setup”

By Pete Jones

I’m probably opening a “can of worms” by writing this article but my intent is to keep you from going through the grief I went through for my first electric plane.

Some R/C electric planes today are the “plug n play” type, they don’t fly too fast, not too dangerous, and some you can fly right in your living room. A couple of grades higher, and still “plug n play” are units like the “Stryker” from one company that I won’t mention, and this one is advertised at 80 plus mph. Great, now we’re into “electric modeling”. In this last example this is an extremely fast plane using high amounts of energy. My first point is that with these purchases, all of the electronics are set-up for us, and we have loads of fun but we have not learned anything because the manufacturer did all the component specs. for us. At some point, and I have seen this! you will have to modify these set-ups that the manufacturer did. An example is; suppose you break a prop and you don’t have a spare? Suppose your local hobby shop don’t have the *correct* spare, so you pick the closest one. At this point you may have just overloaded the system. I have also seen the manufacturers of some of these planes overload the systems too, right out of the box! We need to know how these systems work in order to modify one or to setup a new one. I do not profess to know everything about all of this but I want to tell you some important things as to get your mind set to go shopping. As I have said before you need ample power sized for your plane; i.e. correct kv rating, correct prop size, correct speed control, etc.

Back in the August newsletter we talked about kv rating, battery sizes and propeller sizes. Now let’s talk about the heart of the entire system, the “ESC” or electronic speed control. When you go shopping for one of these you may become frustrated by the amount of ESC’s on the market, and figuring out which one you need will bring the onset of frustration to a climax. At first let’s say that the ESC’s are like cars; e.g. different brands, different goodies installed, etc. Like cars, ESC’s need to be purchased based on how you’re going to use them. The capacity or *current load* of your motor is a consideration, you could get a high torque starter or low torque one, you could get hard brakes or soft brakes, and many other factors of consideration to spec one out. Remember we talked about kv rating?

Let’s go to extreme for clarity. You could have a low kv motor around 800kv, and on the other end of the spectrum you have a motor of 3500kv, both may need a 30 amp speed control but here you may have a timing problem and the ESC needs to be able to start the motor based on this info. Some speed controls have timing set, some programmable, and some are automatic. Please read all the manufacturers recommendations for this info as you may need to adjust timing. Some of the more expensive ESC’s are programmable whereas the in-expensive ones may not have some of the programmable features and just be set to automatic, or just set period. In the case of the “plug and play” units they may be low cost and just simply set to the exact specification right out of the box.

Here are a few others things for your consideration and things simply to be aware of for safety:

- 1) Throttle reversing; some ESC’s require you to reverse the throttle function on certain radios, please read instructions! As you go through an arming sequence and bring that throttle lever down to the off position, the motor could go full throttle. I can’t imagine one of these hitting me right in the face! or some other part of me!
- 2) Low voltage cutoff; if you use “Li-Po” batteries, it is very important to stop draining the battery at a certain voltage or you can ruin the battery. A defective battery can create an explosive situation. The ESC is set up to cut your equipment off a certain point. It would be wise to learn about the cutoff feature before you buy. Let’s say that an ESC is rated for 7.4v to 11.1 volts, this means that if you were to put 14.8 volt on it that it may not cut off at a safe voltage!
- 3) While at the field I watch while most people just fly until the battery quits and then just glide in for a landing. This is fine as long as you have a cutoff feature built in to the system. Also, some ESC’s are programmed to do some math as they are armed to calculate cutoff voltage. Say you were to fly for 5-10 min. then land for a while, then you decided to fly again and knew you have enough battery for a second flight? When you arm the system the second time on the half charged battery the ESC may calculate the cutoff voltage based on the lower voltage amount, some do this, and it would cut the motor off too low, and could destroy the battery.
- 4) BEC; or battery eliminator circuit. This feature allows you to run the flight controls and receiver off of your flight pack, and eliminates the need to have a separate receiver battery. This feature will cutoff your motor at a point to give you enough battery power to use your flight controls to land. Some ESC’s do not have this feature but you can purchase one separate, or add a separate receiver pack. It is possible to inadvertently disable this feature if you do not adhere to the manufacturer’s recommendation for the ESC. To sum up, when you go shopping ask to see the literature with the speed control, go online, visit the hobby shops web pages, as they will let you read all the specs of the ESC units. Ask questions! Be safe.

“December Safety article”

UAV Incident

Approved for release by the U.S.
ARMY Research laboratory
Director of information/ public affairs
office.

3 October 2007:

A Shadow UAV while on a routine test flight crashed in the desert over Yuma Proving grounds. The shadow is a 375lb UAV used by the U.S. Army for battle-field situational awareness. The UAV was a total loss, a cost of approximately 2.3 million dollars. (US)

This particular Shadow was undergoing field testing of a first of its kind, heavy fueled (JP-8) engine. This engine was developed by the ARMY research lab, NASA/Glenn research center, Cleveland OH. The initial test flights were conducted by the ARMY research lab, Aberdeen MD. The mishap investigation board was convened at YUMA proving grounds, Yuma Arizona.

I was one of the several people called to Yuma to meet with the Mis-

hap board. Being the last pilot to fly this aircraft before it was shipped to Yuma. After several days of investigation, and gathering all documentation from all parties involved, a determination of cause was found. A simple connection on a serial modem's antenna, (a device which transmits and receives data from the UAV to the ground station) had come loose. The antenna's center pin had broken, leaving a gap between the antenna



and the modem, which would vibrate apart in flight causing a break in communications. The aircraft went into its fail safe mode, but when the pin would make contact again, the auto-pilot would attempt to do the last command it received.

Due to the on again, off again communications, electrical noise induced in the auto-pilot system, it caused the auto-pilot to shut down, which caused

the incident.

You might ask Why this is should be in our newsletter?

Now that the flying season has slowed down to its winter pace, most of us are starting to put our aircraft to bed for there long winters nap. Before you do, look at your radio equipment. Unwrap the foam from the receiver, unplug the connectors look at the pins, is there any corrosion? Are the

pins fully seated in the connectors? Is the antenna in good shape? How's your switch, does it feel right?

Look at the battery; is the connector free of corrosion? If you can, look at the ends of the batteries, is there any corrosion on the ends where the tabs are soldered?

I know most of you do this in the early

spring or very late winter, but I prefer to do it now, this way, if I need part's I have plenty of time to get it ordered and figure out how break the “news” to the wife. This way when the snow's flying in February, I have an excuse to lock myself in the workshop!

Till next month.

Takeoffs are optional, lands are not!
Brian