



Newsletter
 Knoxville TN Oct. 2018 AMA #594
 Editor..Mike Catlin..catlimi2000@yahoo.com
www.kcrctn.com
 Webmaster..Jeff Prosis..jeffpro@wintellect.com

2018 Elected Officers
 Pres.....Ed Dumas.....ed@eddumas.com
 Vpres.....Paul Funk.....paulfunk24@gmail.com
 Secretary.....Rick Thompso.....jrt1953@gmail.com
 Treasurer (acting)..Mike Catlin.....catlimi2000@yahoo.com
 Executive Board
 Randy Philipps.....randy@accesssolutionsinc.com
 John Baselone.....jrbfarm@yahoo.com
 Rick Thompson.....jrt1953@gamil.com
 Safety Officer
 Denny Evans.....evans9633@bellsouth.net

In the next few months we will be expecting many new visitors to the field. Please welcome them and answer any questions they may have. If possible show them the different types of models we fly, ie. electric, gas, EDF, ARF's, scratch built, drones and helicopters. Be patient, as most people are not 'in to' our hobby and may look upon what we do as spying and endangering aircraft. Invite them back and tell them about the fly-ins and contest we have coming up. Let them know the best times to visit (due to winds and weather). Remember, sometimes the 'new dog' can end up being a great asset.



Just a reminder, check control directions before every flight. If you move the stick to the right the right aileron goes up. Move the stick to the left and the left aileron goes up. Pull back and the elevator rises, push forward and the elevator descends. Takes only seconds. About the same amount of time the aircraft will take to reduce itself to trash if either of these critical controls are reversed.

From Denny Evans Safety Officer

I've been thinking a lot lately about habits that we have with our hobby of flying RC.

Whether it's flying our airplanes, drones or heli's. It doesn't matter what part of this sport you are participating in, more than likely we all have the same habits.

When we get to the Flying site we get our RC craft of choice out and all our equipment that we brought to make it fly, charge, run, crank over, fill up and start and or run.

Then the habits kick in, Compliancy, there are times when all has been going well with our RC stuff that we think, Man this thing really did good the last time I flew it, so we put it together and really don't check things over as good as we should because it did so good the last time.

When was the last time after a great day at the Field that you really checked over your RC Craft? Even though you didn't have any problems, no bad landings, crashes, or anything that would make you check thing over. With the key word here being MAKE!

There have been times when I got home after a great day of flying that I find things loose, bent or broken. Don't get complacent and just go fly, check thing over even before you get to the field and then check thing again just to try to make sure you didn't forget something.

Another thing is we sometimes forget about all of our other equipment that it takes to be able to use or fly our stuff. Battery's, chargers, glow drivers, starters, refueling equipment, ECT...

Check these things as well; they also have a need for maintance.

What I am trying to say is, Don't forget to check over your stuff for possible problems, just because it was good the last time you used it doesn't mean it well be the next time. Keep yourself and your stuff in a good safe state to the best of your ability and think about the safety of others.

Feature Article from Michael Catlin

In 2017 I attended the WRAMS show in Toledo, Ohio and when I saw that there was a seminar about picking servos I immediately thought that it would be a technical discussion on control surface hinge moments. After sitting through the discussion on servo types (digital vs. analog, metal gears vs. nylon and coreless vs. cored motors) the Hi-Tech representative told us that pick the most powerful, most accurate, fastest and expensive Hi-Tech servo that will fit.

Well, that was kind of disappointing but it led me to investigate control surface moments. There are 2 control surface hinge moments: moment due to deflection and moment due to angle of attack. Moment due to deflection is pretty intuitive. Moving the control surface out of its 'natural' position disrupts the air pressure above and below the surface that tries to return it to zero deflection. The moment due to angle of attack is due to the airfoil developing lift (positive or negative). Since most tail surfaces use a symmetrical airfoil at a small negative angle of attack (incidence) the control surface will deflect slightly downward. Add that to gravity and there is a moment to be resisted. Ailerons will tend to deflect upward. But how much moment is developed?

The NASA Technical Report Server is an excellent source of information (<https://ntrs.nasa.gov/search.jsp?R=20010073036>) and tables can be found that gives hinge moment data for many airfoils but applying this to small aircraft (like our models) will require much study. But luckily some information can be derived that will help.

First, control surface hinge moments is nearly linear over usable deflections. In other words, the moment at 10 degrees deflection is 10 times the moment at 1 degree.

Second, control surface hinge moment varies as the square of the airspeed. So doubling the model's airspeed will result in 4 times the moment. So in a dive the servo may stall before commanded deflection is reached. Hopefully, the limited deflection is enough to pull out.

Third, control surface hinge moment varies as the cube of scale. Doubling the size of the aircraft will require 8 times the force by the servo to achieve the same deflection.

Fourth, control surface hinge moments vary linearly by control surface span so increasing ailerons from half span to full span will require double the force from the servo.

Fifth, control surface hinge moments go up by the square of the control surface chord. An example would be modifying a control surface hinged at 80% to one hinged at 70%. This results in an increase of 1.143. Squaring 1.143 gives 1.306. An increase in force required by the servo of 130%

So, how do we determine what servos to use? Pick the most powerful, most accurate, fastest and expensive servo that will fit.

KCRC Meeting Minutes 9/11/2018

OLD BUSINESS

The September 2018 KCRC meeting was held at the field. President Ed Dumas called the meeting to order at 7:03PM. There were 21 in attendance.

Ed recognized prospective new members Michael Lanning and Jim Duke.

The August regular meeting minutes were approved by unanimous voice vote.

Michael Catlin gave the Treasurer's report which was accepted by unanimous voice vote.

Field Officer John Basalone had no issues to report.

Safety Officer Denny Evans had no issues to report.

Phil Spelt gave a post SPA contest report. There were 18 registered contestants, making this one of the larger contests in the region. Phil reported a net profit of \$450 for the club's treasury.

Ed reminded all members that the mud run will be this coming Saturday September 15th. The field will close for flying beginning noon Friday and remain closed through Saturday.

Ed repeated last month's announcement that Knox County Parks and Recreation Director Doug Bataille recently retired. The new director will be Paul White. Ed has sent an email requesting a meeting with Mr White, but to date there has been no response. Randy Philipps will also be attempting to speak with the new Knox County Mayor, Glen Jacobs.

Ray Curd suggested KCRC host a picnic for the new "drone" members. There was a motion made to allocate \$300 for picnic expenses, which passed by voice vote. The Executive Committee will contact Kevin Turner to coordinate a date for the picnic.

Phil Spelt, who along with Gene Waters was appointed to a committee to select a token of appreciation for Jim Scarbrough's long service to the club as news letter editor, made some suggestions he would like the club to consider. Phil suggested the club have a framed photograph of a Westland Lysander (one of Jim's favorite planes) made and given to Jim. He also suggested the club might consider a "Traveling Trophy" inscribed with and in honor of Jim's name, to be given to each year's winner of CubFest. Phil suggested the club consider and share their thoughts at next month's meeting

The framed illustration (not photo) of the Lysander is happening -- Gene Waters is doing it, as we "speak"

Phil suggested an OldTimer's Fun Fly, and presented proposed rules for several events. The OldTimers Fun Fly would be a separate event from the CubFest. AFTER Phil suggested that, we discussed merging some of those events into the CubFest rather than creating a separate event, and using them to determine the "Best Cub" award.

NEW BUSINESS

Denny Evans announced that KCRC will be hosting a church youth group meeting on September 29th at the field. There will be demonstration flights of planes, helicopters and quad copters. Denny is also looking for several volunteers for the demonstration flights and with buddy box flights for the youth.

Craig Greening with Horizon Hobby contacted Ed about the possibility of doing a "Dealer Demo" at KCRC on October 9th and 10th. A motion was made and carried to extend an invitation to Horizon Hobby to do so.

During the August meeting, Ed took a straw poll to gauge the possibility of reducing the number of meetings to 4 each year. The straw pole indicates the club is in favor. Rick Thompson reported that while the By-Laws do not specifically prescribe how often meetings must take place each year, there are references to meetings that take place on specific months, thereby implying monthly meetings. Ed therefore appointed Randy Philipps and Rick Thompson to a By-Laws Committee to propose modifications to the By-Laws that would clarify any ambiguity and present it at next month's meeting for a possible vote.

Ed reminded the club that we might be able to have an indoor fly-in this winter at the K-9 center off Lovell Rd. This was first announced at last month's meeting. Ed will contact the building's owners to check on cost and advise the club at next month's meeting. A motion to allocate \$200 was made and carried by voice vote.

Joel Hebert announced that our President, Ed Dumas won 2nd place in F3J glider contest at AMA headquarters in Muncie, IN.

There were no entries for Model of the Month.

Randy Philipps won Crash of the Month for the unfortunate loss of a new P47 this past Saturday. The plane was destroyed shortly after takeoff due to reversed ailerons.

Respectfully Submitted,
Rick Thompson, Secretary

Don't forget that KCRC has a Facebook group. For Facebook members just search for KCRC in the search box. Don't forget to select the 'Join' box. The Facebook group has a daily weather prediction for the next 3 days along with an aviation related picture. There are group discussions as well as aviation related posts. There are picture albums as well as a files section where articles from many different model magazines are stored. We also have aviation related video clips. And, other local clubs post upcoming events.