



**KNOX COUNTY RADIO CONTROL**

**January 2020 Newsletter**

Knoxville TN AMA #594

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[www.kcrctn.com](http://www.kcrctn.com)

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**2020 Elected Officers**

Pres.....Frank Allemand.....frankallemand@charter.net

Vpres.....John Basalone.....jrbfarm@yahoo.com

Secretary.....Richard Love.....rltnlove@1791.com

Treasurer .....Mike Catlin.....catlimi2000@gmail.com

**Executive Board**

Rick Thompson.....jrt1953@gmail.com

Allan Valeo.....allan.valeo@snet.net

**Safety Officer**

(To Be Assigned) .....

Sad news to report, Eugene Waters has gone West.

From Jerel Zarestky,

“I was very sorry to hear the news of Gene passing away. We all loved Gene, all of us now considered the old timers of KCRC. Gene was with us through thick and thin, involved in any and every project at the field.

My favorite story recounting Gene’s expertise, is that of the design, engineering, and building of the original 12’ x 24’ shelter at KCRC. (Many thanks to Bob Morris for helping me “remember” some of what is to follow.) It was 1986 and adding such a structure at the field was long overdue. Bob Morris was president and a major proponent of building a shelter of some sort.”

“We had everything from casual discussions to dedicated meetings about the design and how to orchestrate everything. The way this unfolded as I remember it, was that Bob was willing to manage the project the next spring but he didn’t want to do that AND be president again in 1987. It was suggested I run for president or maybe I volunteered to run or maybe a little of each. Anyway, Bob began drumming up support to go forward with building some kind of shelter at the field. He called for design entries from the membership and many were submitted, including similar designs from Gene and Dennis Hunt. This ended up being the design of choice except I think we doubled the size to 12’ x 24’. Gene’s and Dennis’ designs differed basically in only how the structures went up. I remember feeling like being between a rock and a hard place with the decision we had to make as to who’s construction technique to go with; two very good friends with equally good plans. Gene was however, a few steps in ahead of everyone else in that he had found and priced materials for the main structure, flooring and roofing.”

## **KCRC Meeting Minutes – December 10, 2019**

“Since KCRC did not have unlimited resources and equipment, Gene’s finds were a huge plus. The price he was quoted for 4x6 and 1x6 green, rough cut oak planks from Oak Ridge Hardwoods, a local lumber mill, was impossible to beat as was the sheet metal roofing remnants he’d located. Gene’s preliminary contributions did not end there. He also had planned out the footer construction and the raising of the heavy oak post structure with only hand labor, no heavy equipment required. Dennis’ work at his one-man airplane manufacturing factory left little time for other work and we went with Gene’s design and construction procedure.

(I hope I have the following at least mostly correct, my apologies if not.) I think we started in February or March. Gene and a hand full of people put in all the footers on one weekend. Gene had the procedure and materials to lay out positions, set rebar, build forms for the concrete footers. They poured the concrete complete with metal components to bolt the 4x6 oak posts in place. The next weekend the wood structure went up on Saturday. Everything went very smoothly and the building was erected with great precision thanks to Gene’s techniques. Dennis found time to help out on Saturday and later commented on how beautifully simple and reliable Gene’s construction methods were. Sunday, the roofing went on. With the joinery he used, the materials, and design, it was a structure that was built to last. That has been demonstrated several times over the years with additions to the structure and by the simple fact that it’s now almost 33 years old. We used that shelter for every club activity we had at the field and a lot of us KCRC’ers around since that time think about and thank Gene Waters.

I “picked his brain” on more than one occasion, getting ideas from or bouncing ideas off of Gene for one R/C project or another. I loved him and will never forget him. Unfortunately, my wife Paula and I were in Colorado for the holidays and were unable to attend services for Gene. Our heart goes out to Betty and Keith for their loss.”

KCRC President Ed Dumas began the meeting at 7:00 p.m. Tuesday December 10, at the New Beginnings Baptist Church, 11218 Yarnell Road, Knoxville. There were 21 members attending. No new member was present. Treasurer Michael Catlin was collecting dues.

There were no corrections to the September minutes, which were approved by unanimous voice vote.

Michael Catlin gave his Treasurer’s report. Sources of income included the Marine Mud Run, drone race, and membership dues. The major expense was for sealing of the runway by a commercial firm from Knoxville. Michael’s report was approved by unanimous voice vote.

Field Officer John Basalone reported that there was nothing much new to say about field maintenance. However, a discussion of runway maintenance began. Topics included the executive committee decision to have a commercial firm reseal the runway, the quality and worth of the resealing job performed, the club doing the runway work itself in the future, the pros and cons of filling cracks, repairing the bad section of the runway north of the center line, completely resurfacing the runway, and getting help from Knox County. And there was brief discussion of the previous issue of having a flying field down closer to the lake.

Safety Officer Denny Evans stated that there was no safety issue to report.

### **OLD BUSINESS**

Ed reported on the Scout Fest in Blaine in October. Ed, Melissa Dumas, Steve Jones, and Michael Catlin represented KCRC. Around noon they started flying planes with scouts on buddy boxes, and finished with about 50 scouts getting a chance to fly. Favorable comments were received about their participation.

Ed discussed the Executive Committee's decision to reseal the runway using a commercial firm. Because the expenditure exceeded the single item expense limit specified in the KCRC bylaws, Ed disclosed this expenditure to the club at this meeting in accordance with the bylaws. A brief discussion followed, which included some negative comment on the quality of the resealing job and the approval of funds. Previous discussion of the funding of runway repair and a vote that approved funding was covered in the September minutes.

Michael gave an update on the use of colored stickers on transmitters to aid in identifying members vs. non-members at the flying field. For next year the sticker is yellow and shows KCRC 2020. A discussion followed concerning a small group of people who showed up at the field recently and began flying even though they were not members.

## **NEW BUSINESS**

The annual KCRC banquet is again planned to be at the Golden Oak Restaurant in Oak Ridge the second Tuesday of January. Phil Spelt agreed to make arrangements with the restaurant.

The KCRC meeting frequency was discussed. This year the meetings were quarterly. There was quickly a general consensus to hold meetings every other month, and a motion passed by a vote with one opposed. Thus, after the banquet in January, the first regular KCRC meeting will be in February then every other month, for a total of 6 meetings in addition to the banquet. A few minor changes to the bylaws may be required to accommodate this change. It may be possible to have some meetings at HobbyTown, but the store closes at 8 p.m.

Problems concerning KCRC's car-track program were discussed at length. Only about 6 persons joined KCRC as car-track members, and so far there has been little use of the track.

Around 200 fliers promoting the track were distributed by HobbyTown. KCRC purchased insurance (totaling around \$400) to cover the car-track members, and Michael Marshall contributed more than \$800.00 for car-track materials.

The insurance expires around August 2020. Before making any further decision about its track program, KCRC may wait until the insurance is about to expire to see how the membership problem evolves. The layout of corrugated pipe marking the track greatly increases the trouble of mowing, and it was decided to remove this pipe but leave the dirt jumps in place. Converting the track to dirt and having races was discussed, but as at previous meetings, this option was dismissed as being too expensive and not practical. Randy Philipps agreed to talk again with the HobbyTown representative to see what more can be done to promote membership.

The last drone race was discussed. Attendance was low, perhaps partially a result of the poor weather forecast. KCRC offered free membership for the remainder of the year to race attendees, but no one signed up. Kevin Turner and others involved in the drone racing like the KCRC site and want to continue having racing events. Randy Philipps agreed to talk to Kevin about coming to a KCRC meeting and discussing the racing activity. It was agreed that the drone course and racing are very compatible with the KCRC flying field and that this activity needs to be promoted and continued. The races generate income. It was mentioned that KCRC should have its own drone course gates, because the drone racers often remove their gates after a race.

Ed presented the results of the election of officers. For 2020, Frank Allemand will be President, John Basalone will be Vice President, Michael Catlin will continue as Treasurer, and Richard Love will be Secretary. Rick Thompson and Allan Valeo were elected as executive board members.

Crash of the Month was won by Gary Swigart. He was flying a 63-inch Phoenix Dolphin that had an electronic control failure on the turn to final approach from the east and crashed in the trees. It was the plane's 7<sup>th</sup> flight. The one-piece wing was recovered but the fuselage was still high in a tree.

There was no Model of the Month.

Joel Hebert thanked the club members who gave support and visited him during his recent stay in the hospital.

The meeting was adjourned at 8:25 p.m.

Respectfully submitted, Roger Kroodsma, KCRC Secretary.....--  
Roger

*Merry Christmas to all,*

*And to all a good flight!*

## Technical Article

This month I thought I would share one of my "Pet Peeves". I am always looking for realistic ways of determining the correct way to make my designs better. One of the things that is still a black art to me is determining servo sizing. Yes, I could use XFLR5 to get hinge moments but there must be shorter ways so when I saw an article in "HighFlight" (Vol 31 Issue no 1 Spring 2010) on servo sizing I was ecstatic.

And then I took a closer look...

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The minimum torque requirement is calculated using the following formula for a conventional control surface.

**Minimum torque = A \* Chord \* Span \* Chord/3 \* Servo Arm/Control Arm**

Where:

**A = Airspeed factor** (see table below)

**Chord** = average control surface chord (root chord + tip chord) / 2

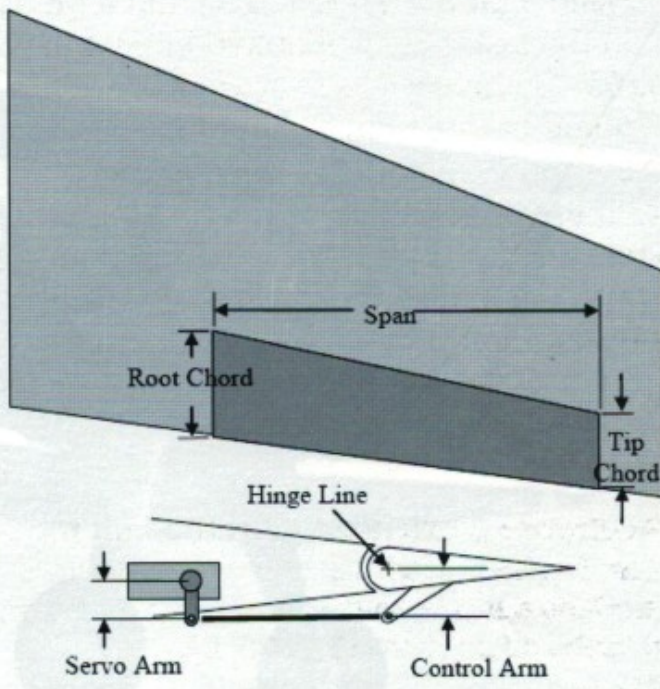
**Span** = control surface span

**Servo Arm:** the distance from the center of the servo arm to the control linkage attachment.

**Control Arm:** the distance from the hinge line to the control linkage attachment

All measurements are in inches, the minimum torque is in oz-in. The following sketch shows how the measurements are made.

Cut outs in control surfaces should be ignored, such as a clearance in an elevator to make room for rudder movement. The calculation should be made as if the clearance had not been made.



### **Airspeed factor {A} for use in both conventional and full flying formulas.**

Propeller aircraft whose flight regime will only include level flight, flat turns, gentle climbs and moderate dives:  $A = 1.25$

Propeller aircraft whose flight regime includes modest aerobatics, including loops, rolls, inverted flight and spins:  $A = 1.5$

Turbine aircraft whose flight regime will only include level flight, flat turns, gentle climbs and moderate dives and whose speed will not exceed 140 mph:  $A = 1.75$

Propeller aircraft whose flight regime includes unlimited aerobatics:  $A = 3.0$

Turbine aircraft whose flight regime includes unlimited aerobatics:  $A = 4.0$

The “Airspeed Factor” is much like a Safety Factor and is a dimensionless number. But look at the other variables in the equation Chord has the units of inches. Span has the units of inches. Chord/3 has the units of inches. And for Servo Arm / Control Arm the units for both are inches so they cancel out leaving just a dimensionless ratio.

Now if we multiply it out we get Inches (Chord) \* Inches (Span) \* Inches (Chord/3) giving inches<sup>3</sup> giving a **volume** instead of the expected **oz-inches**. If you are working this out on a calculator you will get a number but, mathematically it doesn't make sense. And, blindly relying on formulas published in magazines (or the Internet) can be dangerous. I have even found errors in engineering text books. It was probably simply a “typo” but at least the mistake made the use safer rather than more dangerous. So take the time to work out the units to be sure you get the units you expect to get.

**The annual KCRC banquet is again planned to be at the Golden Oak Restaurant in Oak Ridge the second Tuesday of January at 6:30 PM (although some arrive earlier).**

Remember, meetings are on even months i.e. February, April etc. Locations will be announced but April, June, and August are expected to be held at the field.

Over the next year I will be doing in depth interviews of club members so that new members like me can get a more historical sense of KCRC. I will be asking such questions as, "What got you into the hobby?", "What keeps you in the hobby?" and "What was your most exciting time at KCRC?" If you would like to participate let me know.

**The February club meeting will be at the New Beginnings Baptist Church 11218 Yarnell Rd.**

**February 14 at 7:00PM**

**We will be accepting dues for 2020. Cash, check or credit card accepted.**

**Don't forget to visit KCRC Knox County Radio Control on Facebook!**

194 members strong.  
Daily 3 day weather predictions  
Daily aviation photos  
Event advertisement from other area clubs  
Items for sale  
Articles, information and aviation related videos.

<https://www.facebook.com/groups/817242841697766/>

*I am going to try a little incentive to get you, the membership, to contribute articles. If you would like to receive a triangle cutter (plastic parts only) send me an article for the newsletter and I'll send you one. Or, if you like I can send a strip cutter. I'm looking for 500-1000 words and include pictures if you like. A simple text file will do fine. You can email me the file(s) at [catlimi2000@gmail.com](mailto:catlimi2000@gmail.com)*