



## Newsletter

Knoxville TN Nov 2017 AMA #594  
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### 2017 Elected officers

Pres.....Rick Thompson.....[jrt1953@gmail.com](mailto:jrt1953@gmail.com)  
 Vpres.....Ed Dumas.....[ed@eddumas.com](mailto:ed@eddumas.com)  
 Secretary..Roger Kroodsma.....[rogkroods@att.net](mailto:rogkroods@att.net)  
 Treasurer..Joel Hebert.....[hebertjj@gmail.com](mailto:hebertjj@gmail.com)

### EXECUTIVE BOARD

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 John Basalone.....[jrbfarm@yahoo.com](mailto:jrbfarm@yahoo.com)  
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 Safety Officer  
 Randy Philipps.....[randy@accessolutionsinc.com](mailto:randy@accessolutionsinc.com)

## THIS'N THAT

- ▶ **Halloween** is over and we're rolling on toward Thanksgiving, so Happy Thanksgiving to you all..
- ▶ Just noticed that we passed the 44<sup>th</sup> birthday of KCR C field on October 7<sup>th</sup>. If I had caught it sooner we could have had a birthday party.

Incidentally, anyone interested in a history of our club can get one from me in PDF format. It's pretty interesting reading. It is fairly complete ( but has no pictures ) and goes back to the early forties. If you'd like one, let me know and I'll email you a copy. In fact, if you'd like a copy of any old newsletters, I can supply one.....

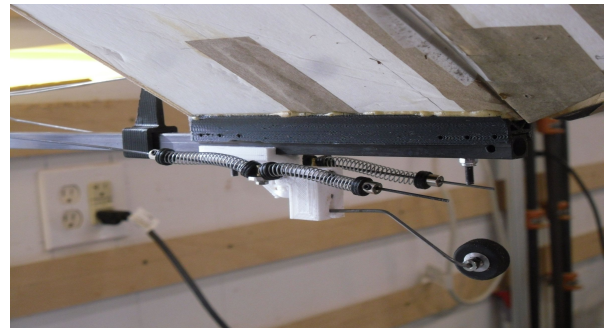
### Steering a V-Tail Slo Stick by Michael Catlin

Most of you know me at the field as the crazy guy that flies (and attempts to land) a heavily modified V-tailed Slow Stick. I added the V-tail after seeing a YouTube video of a Slow Stick with a V-tail and my airplane was being repaired. Hey, it looked like fun! Would I do it again? Probably not, but I learned a lot.

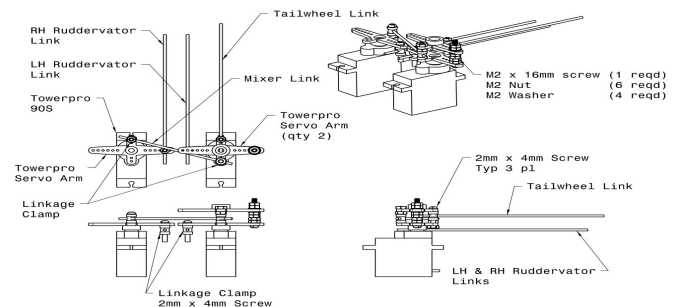
The Slow Stick was impossible to taxi with the fixed tail wheel so when I added the V-tail I removed it. I figured that with nothing preventing the tail from moving sideways that the propeller blast over the control surfaces would steer it. Big Mistake! Several ground loops (and subsequent repairs) later I realized that tail draggers need something in the back to keep the nose pointing forward. Simply adding a wheel or skid would put me back to where I started from so it needed to be steerable. But how to make it steerable when there is no "rudder" servo. The mixing of the V-tail occurs at the transmitter so the steering needs to de-mix the movement of the 2 servos to ignore the elevator movement and only supply the rudder movement.

My first scheme was to create a system with a left and right push rod system with balancing springs. I used

fittings which allowed the push rods to slide freely on either side of a 3D printed tail wheel "tiller". Using a single spring on either side resulted in the servos stalling when the elevator was used because compressing the springs further created too much force. The next scheme was to have 4 springs, 2 on each side of the tiller.



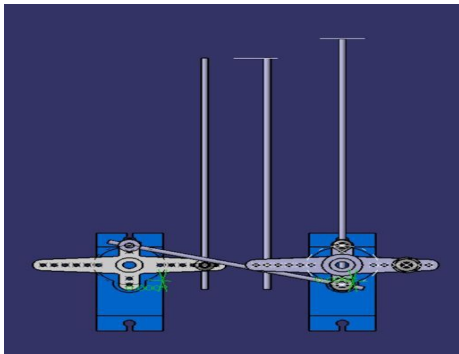
The force due to compressing one spring was balanced by the expansion of the other spring. I spent a lot of time trying different lengths and strengths of springs to be able to move the tiller without overloading the servos. This is the system I used for several months. It required constant adjustment and the tiller broke several times (there are some places where 3D printing is not a good solution). I started looking for a purely mechanical solution and in order for me to share it I tried to use readily available hobby parts and keep the system as small as possible.



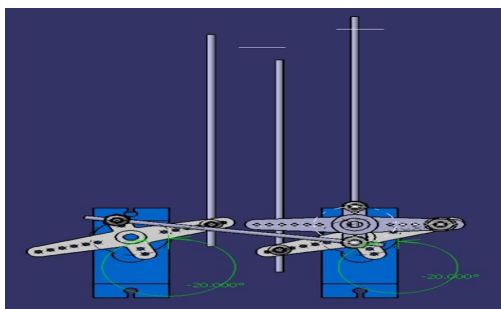
I was almost ready to release this information when Phil Cope suggested that by adding a separate tail wheel servo I could have a much simpler system. Phil took my transmitter and several "musical" minutes (Spektrum beeps) later showed me that the 2 extra channels could be mixed to control the ruddervators and the rudder servo channel could be used to control the tail wheel. I spent several hours switching servo leads and servo direction until I got everything to work in the proper direction when actually installed. This is the system I am currently using. If you need more detail on setting this up please contact Phil or someone else more familiar with programming a computer controlled radio.

The only problem with the purely programmed solution is that if you have only a 6 channel transmitter the only free servo is for the elevator so retractable landing gear and flaps are a no-go. So, I've decided to continue doing a write up for a pure mechanical de-mixer.

The design is based on TowerPro SG90 9G servos and servo arms, 2mm hardware and Hobby King brass linkage clamps. The linkage fits atop the ruddervator servos and can be used for either tail wheel steering or nose wheel steering. Two millimeter hardware can be obtained from Home Depot or ordered from McMaster-Carr. The de-mixer can be scaled up for use with larger servos as long as certain design constraints are followed.



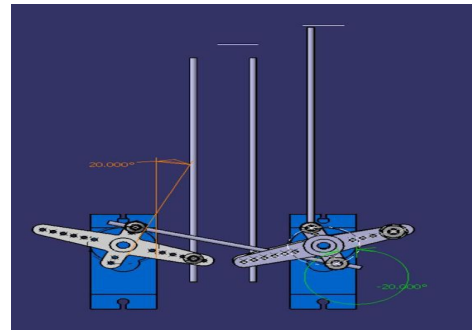
The picture above shows a top view of the de-mixer installed on top of 2 9G servos. The 2 center rods lead back to the v-tail ruddervator control horns which are mounted on top. A pull on either of these rods will result in the control surface to be deflected up. The rod on the far right is connected to the tail wheel tiller. A pull on this rod will deflect the tail wheel to the left. The short white lines



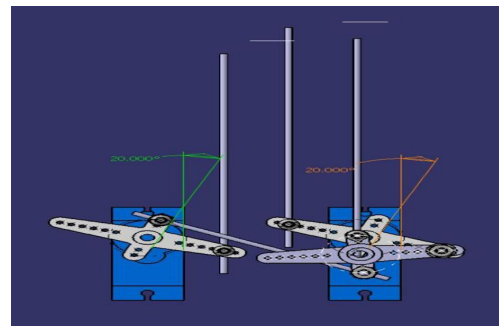
show the neutral position.

If the servos are commanded to move the control surfaces for right "rudder" then the tail wheel tiller is pivoted to the right. ( see photo top right )

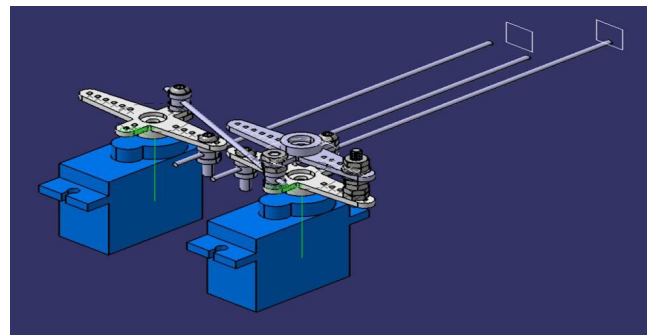
If the servos are commanded to move the control surfaces for up " elevator " then the rod to the tail wheel tiller does not move. This is due to the de-mixer link pushing the de-mixer arm to follow the servo control arm. Note: There is slight movement due to the attachment of the tiller rod is not directly over the servo rotation axes as a result of using unmodified existing parts.



Commanding the servos to move to a left "rudder" position causes the de-mixer link to move the de-mixer arm to pivot around the outboard axis and pull the tiller rod and move the tail wheel to the left.

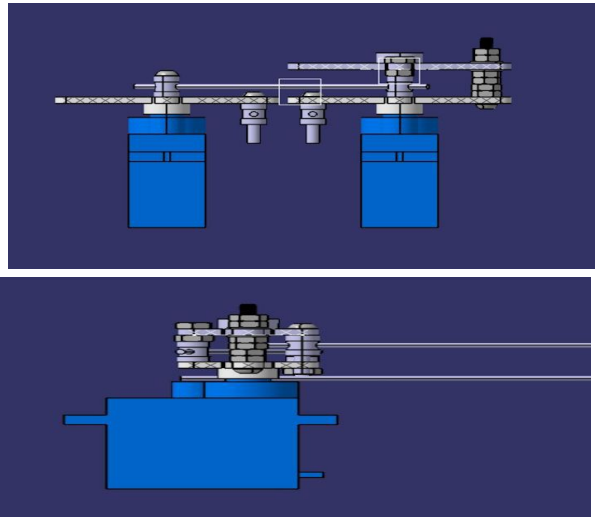


shows the effect of an up "elevator" and left "rudder" command.



Above shows an isometric view of the de-mixer assembly in the neutral position. The stack of hardware on the right is the pivot axis for the de-mixer arm and it raises the de-mixer linkage clamps above the servo arm and allows the

de-mixer link to clear the linkage clamps for the ruddervators. The linkage clamps for the ruddervators are installed below the servo arms and the 2mm x 4mm screws serve double duty by attaching the linkage clamps to the servo arms as well as clamping the push rods. The linkage clamp for the tail wheel push rod and one end of the de-mixer link are mounted similarly. By mounting these linkage clamps in this fashion adjustments to the push rods can be accomplished from above.



Above shows the de-mixer setup from the end and side respectively.

Guidelines: Moving the de-mixer arm pivot axis increases the throw of the tail wheel push rod. Lines from the pivot axis to tail wheel push rod attach point and from the de-mixer link attachment and tail wheel push rod attach point should be at right angles to achieve perfect de-mixing. Servo travel should be limited to avoid a mechanical lock-up at travel extremes. Unused pieces of the servo arms can be trimmed off...Michael..

► Wow! Was this a labor of love or what? I can only imagine the amount of piddling it took to get this to work. But then, that's what innovation is all about isn't it. You get an idea, then piddle till it either works or you run out of patience.

That is some good work, Michael. ■

► Got a note from old friend L.A. Johnston that builders might find interesting.

“ Jim::: I learned something interesting at the “ALES” contest at Tullahoma recently. You know how we have been looking for a color scheme that is visible at altitude? Well, I think I may have found one.

In Texas years ago, I started using a standard color scheme of all white on the top (to reflect heat while setting on the ground) and all black on the bottom, (for maximum contrast at altitude) That worked very well except at Los Vegas where the sky is such a dark blue because of the low humidity .

Lately I have been using the Ultracoat lite transparent covering material because of the weight, and since they don't have a black color in that covering material, I have been using white and purple as my standard colors. I have been using white on the inboard panels of the flying surfaces, and purple on the outboard panels and the fuselage.

At the “ALES” contest there was an airplane that stood out at altitude. It used black on the fuselage, and transparent purple on the horizontal stab, and the inboard wing panels, but used translucent white on the outboard wing panels, vertical stab, and rudder. It made a very big difference having all the dark colors clustered together, and the white to highlight the dark color! My next Windlord will use that color scheme!.....L.A.”

Might give that a try myself on the next one ( if there is a next one ). I used black for the fuse and transparent orange on the flying surfaces of my last model, the big Powerhouse. Kinda like the looks of that.

► **Remember that next month is election day at the December meeting. Randy Philipps is gathering names of candidates so if you are interested in running for an office, let him know.**

### KCRC Hosts 2017 SPA Masters Contest

Phil Spelt, AMA 1294

Knoxville, TN. October 7<sup>th</sup> and 8<sup>th</sup>, 2017, were the scheduled days for the annual SPA Masters Contest in the East District of the SPA, held at KCRC. By late Friday afternoon, we had seven or eight folks practicing maneuvers from “back in the day”. The Knoxville area had had more than two weeks of really fine flying weather, with light winds and bright sunshine. Then, the forecasters began to tell us that things were changing – Tropical Storm/Hurricane Nate was heading our way at a faster speed than originally expected.



*Jimmy Russell sent this picture of the contestants.*

Saturday morning dawned bright but foggy at the field, with word that the weather would be inhospitable for flying on Sunday. We held the pilots' meeting as the fog lifted. At that meeting, we unanimously decided to condense the event into a one-

day affair. Following the National Anthem sung gloriously by KCRC Treasurer and local SPA scoring guru, Joel Hebert, we had wheels up at 9:10 am.

Even with a one-day event, we were able to have 5 rounds for Novice and Expert, and four rounds for the other classes. Our KCRCer who has been scoring for our SPA contests for years, Joel Hebert, received a special clock thanking him for his efforts over the years. We gave quartz clocks for the first 3 places in each class. These clocks had the SPA logo

Bill Dodge flew Advanced, but did not place. Dave Johnson flew Novice and received a 2<sup>nd</sup>-place clock. Jimmy Russell, our new Contest Director, won Sportsman, and also garnered the SPA Season Points Championship for Sportsman Class. I chose not to fly, and concentrate on running the event.

I want to thank Roger Kroodsma for coming out, once again, and for retrieving an airplane from the top of a very tall tree for one of our SPA pilots. Thanks also to President Rick Thompson, who brought his drone and took aerial photos of the pilots gathered on the runway before the contest, and most importantly to John Basalone for preparing the field. It looked great. I also received a number of comments from contestants on the runway, which Bill Dodge, largely on his own, patched and painted. Bill had a good turnout for the sealing during the Marines' Mud Run. **All in all, we had almost no support from KCRCers for either this event nor the one in July.** Perhaps the Club has now lost interest, and we should discontinue holding SPA events in Knoxville...Phil

### **KCRC Meeting Minutes— October 10, 2017**

President Rick Thompson called the meeting to order at 7:00 p.m. at the KCRC field with 16 members in attendance. One new member, Will Roberson, joined KCRC.

There were no corrections to the September minutes, which were approved by unanimous voice vote. Joel Hebert gave his treasurer's report, which was approved by unanimous voice vote.

Rick reported that the Marine-sponsored Mud Run September 16 at KCRC was a success, and that the Marines were very respectful of the KCRC field and had dug a trench for erosion control along the driveway.

Phil Spelt reported on the Mud Run and is providing a write-up for the newsletter. He returned a Mud Run sign forgotten at the field to Major Hudgens, who gave Phil a \$500.00 donation to KCRC from the Mud Run proceeds. The Marines intend to improve the trench next year, but John Basalone pointed out that

improvements may be advisable sooner.

Rick discussed the runway sealing done the day of the Mud Run by a great work party of about 20 KCRC members. Rick gave much thanks to Bill Dodge who did previous work on multiple days filling in all the cracks in the runway. For the final sealing with a complete topcoat, Bill spearheaded the effort and obtained the spreaders and the many large heavy pails of sealer. He later striped the runway, which received complements from competitors in the Senior Pattern Association (SPA) contest held October 7 at the field.

Rick and Phil Spelt discussed the October 7 SPA contest, for which Phil and Jimmy Russell were contest directors and Treasurer Joel Hebert was as usual the scorekeeper. There were 18 competitors. Roger Kroodsma picked up lunch from Subway and, with Rick assisting, retrieved a plane from a tree top by felling the limb holding the plane. Phil is providing a report to Jim Scarbrough for the newsletter. Jimmy Russell thanked KCRC for making the field available for the contest. Phil thanks John Basalone and John Partridge for having the field in good shape for the contest.

Rick reported that someone at the contest accidentally backed a car into the steps, and that Randy Philipps went out the next day and made the repairs.

Rick asked for a safety report from Safety Officer Randy Philipps, who stated that there had been no injuries or safety concerns reported.

### **New business**

Rick reported that the nominating committee for 2018 officers consists of Ed Dumas, Randy Philipps, and Jimmy Russell. Nominees will be announced at next month's meeting where nominations will also be taken from attending members. The vote and announcement of winners will be at the December meeting.

**Crash of the Month** was won by Gary Swigart, whose A4 Skyhawk apparently developed an electronics problem after several flights, got very squirrely, and went down at the lake shore while turning to final. Gary slipped knee deep into the water as he was retrieving the plane.

Rick reported that Gary was an F4 Phantom and T28 pilot in Vietnam and that at the next meeting he will show in-cockpit video of his flights.

There were no entries for **Model of the Month**. The meeting was adjourned at 7:20 p.m.

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