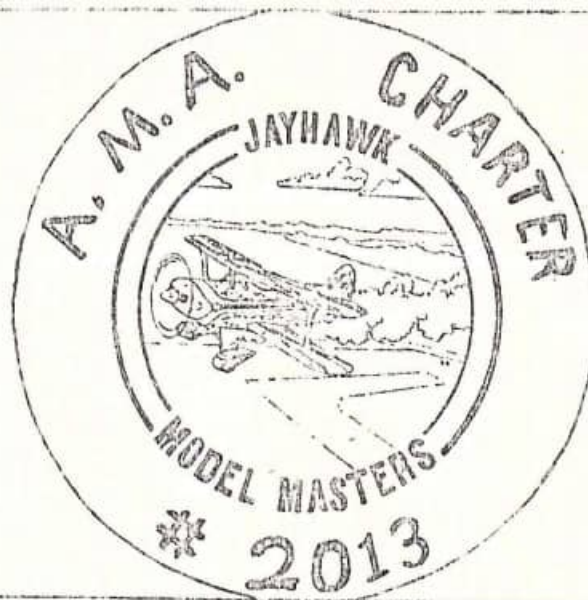


NEWSLETTER OF THE

JAYHAWK MODEL MASTERS
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New Members

Choon Park
Adrian Burns
Brett Bennett

(WELCOME)

ISSUE DATE: August

NEXT MEETING WILL BE:

DATE: August 19th, THIS SAT.

TIME: 8:30 am

PLACE: All Seasons Motel, The Greenery for breakfast.

Mark Your Calendars ----- Set Your Watches

Our next Fun-Fly will be on October the 15th. The events to be flown will probably be announced, and described in the September Newsletter. It was decided at our last meeting that we would try to give everyone time to practice for this one. We should really have some tight competition in events requireing more skill. We will be having events for everyone to enjoy, so plan on bringing a plane and having some real fun.

Byro-Jet Fuel

You can now purchase fuel at Jayhawk Bowling Supply, 530 Colorado, thanks to Chuck Hardman. Purchases can be made between the hours of 8:00 - 6:00, Monday thru Fri. 10% Synthetic, 10% Synthetic Castor Blend, and 10% 4 Stroke fuel is the lineup avail. But you can order other blends by the case lot. The price is \$12.00 per single gal. However, you can go in with a couple buddys and purchase a case at substantial savings.

Our Last Meeting

Richard Ballard provided the info. on how the treasury is doing, and reminded everyone that we lost money on our last Fun-Fly. It would be nice if we could get more folks to participate. Prize's cost a lot, and with only 8 or 10 participating, the treasury can shrink pretty quickly.

Larry Wise talked about how good we really have it here, compared to those who must fly in higher altitudes. His latest trip to the Denver area proved to be informative on what folks there have to deal with when it comes to making an airplane stay in the air.

We'll soon be announcing a few work days at the field. Fill in a few holes, Plant a little grass seed, you know the routine. It really would be nice to have a nice smooth field in the spring. Its getting a bit rough on landing gear in some spots the way it is now.

See you at the meeting Sat.

BIG ENGINE TEST RESULTS

(COMPILED FROM R/C REPORT TESTS)

	90 SURPASS	120 SURPASS	G-38	QUDRA 40	S-T 3000
WEIGHT	11lb. 7oz.	21lb. 2oz.	41lb. 2oz.	41lb. 13oz.	21lb. 15oz.
PRICE W/MUFF.	\$230 R.P.M.	\$300 R.P.M.	\$175 R.P.M.	\$165 R.P.M.	\$210 R.P.M.
MIN. IDLE	1900	1800	1400	1400	1700
PROP SIZE					
13-8	9500	10,800	N/A	N/A	N/A
14-8	8700	10100	N/A	N/A	N/A
15-6	8900	10,000	N/A	N/A	N/A
15-8	7800	9100	N/A	N/A	N/A
15-10	7200	8400	N/A	N/A	N/A
16-5	8400	9400	N/A	N/A	N/A
16-6	7400	8700	N/A	N/A	N/A
16-8	N/A	7700	8300	8800	9100
16-10	N/A	6800	8100	8000	8500
17-10	N/A	N/A	7200	N/TESTED	7800
18-6	N/A	N/A	7800	8100	8500
18-8	N/A	N/A	7400	7800	8000
18-10	N/A	N/A	6600	7000	7000
20-6	N/A	N/A	7200	7400	7800
20-10	N/A	N/A	5700	6000	6000
22-8	N/A	N/A	6000	6000	6400
24-6	N/A	N/A	N/TESTED	5600	N/TESTED

$$\text{SPEED} = \text{R.P.M.} \times \text{PITCH} \div 1056$$

We have started to notice a trend in the club toward ½ Scale size planes so we thought we would compile these test results as an aid toward selecting your "Big Engine". Other factors to consider would be fuel costs over a period of time.

Even though the Supre Tigre 3000 may be the King of performance, it could get expensive on fuel if you fly a lot. The gas ignition engines on the other hand weigh almost twice as much and put out less power. The choice is up to you as to your intended needs and Bankroll! As for me I'm still scared of a little .40!

R.L.B.

NEWS FLASH ** NEWS FLASH

WE HAVE JUST LEARNED THAT PETCO CANADA, THE PEOPLE WHO MAKE QUDRA AIRCRAFT ENGINES HAVE FILED FOR BANKRUPTCY. IT IS NOT KNOWN AT THIS TIME WHO (OR IF) WILL TAKE OVER THE COMPANY OR IF THE MANUFACTURE OF QUDRA ENGINES WILL RESUME AT A LATER DATE. PARTS SHOULD REMAIN AVAILABLE FOR SOME TIME THROUGH THE VARIOUS COMPANIES IN THE UNITED STATES WHO HANDLE QUDRA ENGINES. SOMETHING ELSE TO THINK ABOUT WHEN YOU GET READY TO BUY A BIG ENGINE!

R.L.B.

TECH TIPS

(MEASURING SERVO CURRENT DRAW)

We all know that it is important for a servo to operate freely and not bind up at full travel. The question is: What is good enough, and what happens if it isn't? For only a few dollars we can make a device that will enable us to directly measure servo current (in mA or Milliamps) while the servo is in the aircraft and operating the control in question.

But first, what are we looking for? A standard servo with no load on it and at rest draws about 8 - 10 mA. The same goes for the receiver and other servos in your flight pack. If you add the 4 servos and the receiver together you come up with a total drain of 42 - 50 mA on your flight pack battery. (Normally rated at 500 mA) Simple math tells us that a standard flight pack should operate about 10 hours (Servos at rest - no load) before the battery runs down. We also know that in the real world this won't happen! Why not?

Because in the real world servos move and are loaded to some extent even at rest. In practical terms you can expect about 2 - 2½ hours of safe flying time, but only if everything in the plane is set up properly. In other words all linkage is free, none of the servos bind or stall out at full travel, etc.

What if a servo is binding or stalls out before reaching full travel? It uses about 15 or 20 times more current then it should! In a "worst case" situation such as a throttle servo set up with more travel then the carb arm allows, it may stall at full travel and continue to draw 200 - 250 mA any time the throttle is advanced wide open. In this case only one servo pulls more current then the entire flight pack should use if everything was normal. Guess how long your battery will fly your plane under these conditions?

Now throw in a stiff aileron set-up and a binding nose gear and you are headed for trouble! Not only are you running down the battery much faster then expected but in a situation where several servos are required to operate controls at the same time, may in fact pull the voltage down below the receiver "cut-off point" at which time it will cease to operate! You say you were "Glitched"? Maybe not Big Guy! Maybe your receiver won't receive on .9 volt when it needs 4.8 to operate properly!

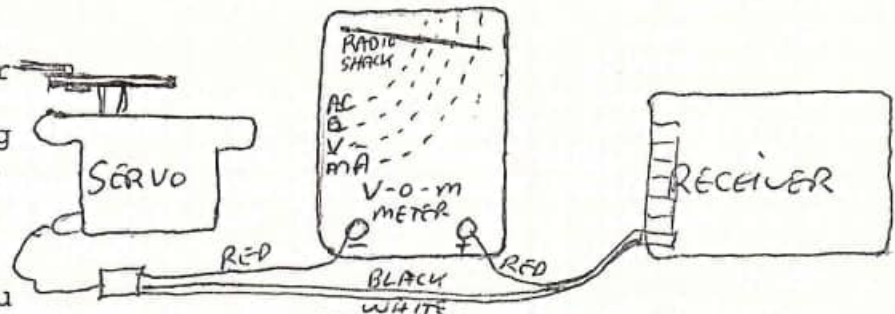
In order to find out how well your aircrafts control system is operating you will need the following:

- A. A volt-ohm meter capable of measuring milliamps (or mA). These are available at Radio Shack starting at \$10.95.
- B. An aileron extension cord to match your radio system.
- C. A couple of "Banana plugs, Pin plugs, or Phono plugs to match your V-O-M meter.

Take the aileron extension cord and cut the positive lead in the center of the cord. (Usually the red wire) Now solder the plugs to the wire ends and plug them into the V-O-M.

From this point you can plug in between the receiver and the battery to measure total current drain, or plug in between the receiver and the servo to measure each servo seperately.

Its now a simple matter to watch the meter while you operate each servo and find and correct any problems before they cost you a plane. Cheap insurance any way you figure it!!



FLY SAFE

RLB

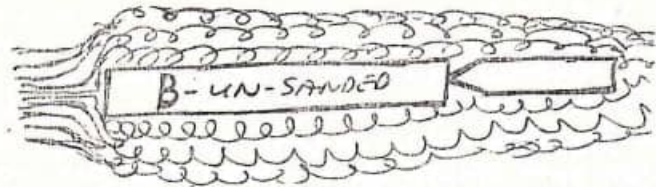
THE LEADING EDGE

Everyone knows that the leading edge of a wing is curved while the leading edge of a 1x4 board is flat. If ask to chose between the two objects and decide which one will fly better we would most likely all choose the wing. Why is it then that we continue to see planes with flat leading edges on the tail surfaces and poorly formed leading edges on the wings? Surely not because the builder didn't know better. Think about the choice between a wing and a board! Perhaps he was just too lazy to sand off the corners to a more rounded shape. But on the other hand maybe he didn't know better. Or realize how much better his plane could fly with good airfoil sections on all the flying surfaces. Lets take a look at these two shapes of leading edges and find out what the differance is.

A. Is a common round leading edge such as you would find on a sheet balsa tail section that has been properly sanded to shape. As you can see, the air flow is able to smoothly flow over the leading edge and "stick" to the rest of the airfoil section. This is good in that it causes less drag and also allows a smooth flow of air over the control surface.



B. Is an un-sanded sheet balsa airfoil which causes very high "flat plate" drag. It also causes air to compress against the flat leading edge and breaks up the flow over the rest of the surface.



These "burbles" of disturbed air reduce the effectiveness of the control surface and may cause a

dead spot around "center" which will require greatly increased control travel before anything happens. It may also cause trim problems because a little movement doesn't do anything while only a little more does a lot! All the buffeting over the control surfaces can also lead to "flutter" which will quickly ruin a servo, not to mention your airplane! If these were the only problems perhaps we could find a fix by static balancing everything and adding surface area to all control surfaces. But it isn't!

How would you like a plane with a very wide speed range that was highly aerobatic yet would slow down and land like a trainer? Sound impossible? Not at all! Consider what is happening to airfoils A. and B. at high angles of attack such as during a "slowww!" landing approach.

Airfoil A. with a proper leading edge shape is able to keep right on flying long after airfoil B. because the air flow is able to make a smooth transition over the rounded leading edge and "stick" to the rest of the airfoil right on back over the control surface. As soon as the angle of attack becomes high enough this bounbry layer of air will break loose and "burble". At this point the airfoil is in a full "stall" and is no longer flying or providing lift.

Airfoil B. reaches this critical angle much sooner because there was not a smooth flow of air to begin with. As a consequence it will stall much easier and at a higher speed then airfoil A. If it happens to be your horizontal stabilizer that stalls guess what happens? Most likely you crash! As soon as the tail stops flying it will drop, which increases the angle of attack of the wing, which in turn also will stall. When this happens you come down. Hard!

What to do? The answer is easy. Get out the sanding blocks the next time you build a plane! Look at the plans and study the leading edge shape of the wing and tail (and perhaps make a cardboard template)! Most likely the person who designed the plane knew exactly what was needed to get all the performance possible from the aircraft design.

Now its up to you to duplicate it in balsa wood for the best flying model aircraft you can build, buy, or fly!

Fly Safe!

The True Meaning Of The Word

Cockpit...The hole you throw the chicken in when the fights over.

Control Throw...The measured distance you can throw your transmitter after you crash your plane.

Wing Strut...Michael Jacksons latest dance step.

Clipped Wing Cub...A bear that can't fly.

Cosic Wind...Something you should never do in a crowd.

Aircraft Cable... The ability to watch HBO at 10,000 ft.

Incidence... A series of events that happened last week.

Airfoil...A lightweight cooking aid.

Editors Note; If you do have problems with Cosmic Wind, make sure you blame the guy standing next to you!

Dave P.

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The Pocono Record, Monday, June 19, 1989

Local

Model planes thrill 'pilots,' spectators

By ANNA ROBATON
Pocono Record Writer

BRODHEADSVILLE — From the field where a crowd of spectators cupped the afternoon sun from their eyes to watch the West End Wings air show Sunday, it seemed to be a display of the daring.

But the real skill was not to be found at the helm, rather at the fingertips of club members who delegated the fancy maneuvers with their feet planted firmly on the ground.

"With a (radio-controlled) model you get the same satisfaction of flying, but you always get to go home and eat dinner," West End secretary Walter Bojko said over the hum of diminutive motors.

Despite the wind, which made some maneuvers difficult to perform, the model planes twisted, looped and dipped over the rolling green hills surrounding Brodheadsville.

Each new stunt elicited a gasp from the crowd of about 200 spectators.

As the each plane touched down revealing its knee-high size, it took its place among an arsenal of models from jets to biplanes, an airplane with two wings in tier.

The ground-laden dare-devils, some of whom build the planes, stood by ready to refuel

the crafts or make mechanical adjustments.

Bojko explained that the model planes are capable of performing the same maneuvers as full-scale planes because the only difference between the two is their size. In fact, he said most aircrafts are initially tested by manufacturers on a smaller scale.

"They're exactly the same as a full-scale, except they're scaled down," he said.

Constructed mostly of balsa wood, some of the vessels can fly at heights of two miles and speeds of 130 mph. They weigh anywhere from 20 ounces to 30 pounds and are propelled by a variety of motors, including diesel and gasoline.

The free air show, which was held on a 23-acre tract owned by the West End Wings, is an annual Father's Day event for the 15-year-old club, whose aim is to further the hobby. West End Wings has about 50 adult members, ranging in occupations from pilots to carpenters, and a junior division for children.

Robert Wilkes of Brodheadsville said he brought his 11-year-old son, Maurie, to the show to get him interested in a hobby. "Instead of playing with the Nintendo."

His mission seemed to be a success. "I like the planes, jets, and how they do tricks," Maurie



The Wicked Witch of the West End takes off during air show

said, keeping his eyes peeled to the sky. "It's a nice day, a nice view, and I always enjoy the planes,"



Rodway Sterner of Kunkletown leads the way for the 'Witch'

copter, and Snoopy on doghouse also took to the skies. Bojko said the club has flying instructors, making it possible for anyone to join. For more information about the club, Bojko may be reached at 215-661-4967.

