SANDERSON FIELD R.C. NEWS

Happy New Year!

CHARTER NO. 3079

SETTING UP YOUR SERVO'S

This months meeting will be held on Thursday January 8th.

The PUD
**2621 E John's prairie road
Shelton, WA**

Setting Up Your Servos

Bob Ackerman, Mid-Missouri Radio Control Association

One of the problems for most beginners is that they rarely set up the servos properly. I have said for years that you need to learn how to set up your aircraft mechanically before you touch the computer on your radio. Therefore, I am going to review what I do to set up any servo on my aircraft.

If I am going to re-set up an existing aircraft, first I copy the current settings to an unused memory location. See your radio manual for exact instructions. After the current settings are copied, clear all the programming for an unused memory location. Set all radio trims to the center. At this point the servo end points should be at 100% and the servo subtrim should be zero.

With the control rod disconnected from the servo, move the control rod until the control surface is centered.

Center the servo arm as close to center as possible. The servo arm should form a 90° angle between the arm and the control rod. Reposition the servo arm on the servo until you have it as close as possible, adjust the length of the control rod to match as necessary, and then adjust any subtrim to center the servo.

Temporarily connect the control rod and look at all the links for that control. On a helicopter you may have two or three connections, as the control rods runs through bell cranks, before the servo actually connects to the control surface. Check each of these 90° connections and adjust as necessary. Now disconnect the control rod from servo.

Now, turn on your radio and center joystick for that channel. The servo arm should be in the center position. Move the joystick to one end of its movement and hold the joystick there. Manually move the control to where the servo arm is now positioned.

Notice the end of the control rod carefully. Does it move past the servo arm reach? Does it not move far enough? Make note of that difference then move the joystick to the opposite end and do it again. The difference between the servo arm and the control rod should be equal on both ends. If not, you may have something else not set properly.

If the control rod goes past the servo arm in both directions, then the control surface will move farther than the servo will allow. At this point, change the positioning of the control rod on the control horn closer to the control surface a hole or two. Reposition the control rod until you get everything matched up. Sometimes a longer servo arm is required.

If your servo arm moves farther than the control rod will move, then use an inner hole on the servo arm until you get everything matched up.

At this point you have technically setup your servo. The servo is centered to the control surface and the control rod will move the control surface through its maximum range.

Now you can use your computer radio to adjust the end points for each servo to get the desired amount of control movement. Many times the control surface will move farther than recommended for normal, sport, or 3-D flight. Check your aircraft instructions for recommended control surface throws.

One warning: Helicopter pilots must ensure to check for any control binding during extreme joystick movements. The controls on some helicopters can move farther than necessary for normal flight, which can cause control binding during flight.

Six Keys to Success for New Pilots

Ed Anderson, aeajr@optonline.net

Whether you have a coach or you are trying to learn to fly on your own, you will need to be mindful of these six areas if you are going to become a successful RC pilot. After many years of working with new fliers at our club, and coaching fliers on the forums, there are a few things I have seen as the key areas to stress for new pilots. Some get it right away and some have to work at it. They are in no particular order because they all have to be learned to be successful.

● Wind ● Orientation ● Speed ● Altitude ● Overcontrol

● Preflight Check

Wind: The single biggest cause of crashes that I have observed has been the insistence upon flying in too much wind. If you are under an instructor's control or on a buddy box, then follow their advice, but if you are starting out and trying to learn on your own,

regardless of the model, I recommend dead calm to 3 mph for the Slow Stick and Tiger Moth type airplanes and less than 5 mph for all others. That includes gusts. An experienced pilot can handle more. It is the pilot, not the model that determines how much wind can be handled.

Let me share a story:

The wind was roughly 8 mph steady with gusts to 12. That was strong enough that some of the experienced pilots flying 3- and 4-channel, small electric airplanes chose not to launch. A new flier insisted that he wanted to try his 2- and 3-channel park flyers. Crash, crash, crash—three models in pieces. He would not listen. Sometimes you just have to let them crash. There is no other way to get them to understand.

Many park flyers can be flown in higher winds by an experienced pilot. I have flown my Aerobird in 18 mph wind (clocked speed), but it is quite exciting trying to land it.

Always keep the airplane upwind from

you. There is no reason for a new flier to have the model downwind ever!

Orientation: Knowing the orientation of your airplane is a real challenge, even for experienced pilots. You have to work at it, and some adults have a real problem with left and right regardless of which way the model is going. Licensed pilots have a lot of trouble with this one as they are accustomed to being in the airplane.

Here are two suggestions about how to work on orientation when you are not flying:

Use a flight simulator on your PC. Pick a slow-flying model and fly it a lot. Forget the jets and fast airplanes. Pick a slow one. Focus on left and right coming at you. Keep the airplane in front of you. Don't let it fly over your head.

An alternative is to try an RC car that has proportional steering. You don't have to worry about lift, stall, and wind. Get something with left and right steering and speed control. Set up an easy course that goes toward and away from you with lots of turns. Do it very slowly at first until you can make

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the turns easily. Then build speed over time. You'll get it! If it has sticks instead of a steering wheel, even better but not required. Oh, and little cars are fun too.

Too Much Speed: Speed is the enemy of the new pilot, but if you fly too slowly the wings can't generate enough lift, so there is a compromise here. The key message is that you don't have to fly at full throttle all the time. Most small electrics fly very nicely at $2/3$ throttle and some do quite well at $1/2$. That is a much better training speed than full power. Launch at full power and climb to a good height, say 100 feet as a minimum, so you have time to recover from a mistake. At 100 feet, go to half throttle and see how the airplane handles. If it holds altitude on a straight line, this is a good speed. Now work on slow and easy turns, work on left and right, flying toward you and maintaining altitude. Add a little throttle if the airplane can't hold altitude.

Not enough altitude: New fliers are often afraid of altitude. They feel safer close to the ground. Nothing could be more wrong. Altitude is your friend. As previously stated, I consider 100 feet—about double tree height where I live—as a good flying height and I usually fly much higher than this. Fifty feet, is minimum flying height for new fliers. Below that you better be lining up for landing.

Overcontrol: Most of the time the airplane does not need input from you. Once you get to height, a properly trimmed airplane flying in calm air will maintain its height and direction with no help from you. In fact, anything you do will interfere with the airplane.

When teaching new pilots, I often do a demo flight of their airplane. I get the model to 100 feet, and then bring the throttle back to a nice cruising speed. I get it going straight, with plenty of space in front of it, then take my hand off the sticks and hold the radio out to the left with my arms spread wide to emphasize that I am doing nothing. I let the airplane go wherever it wants to go, as long as it is holding altitude, staying upwind, and has enough room. If you are flying a high- wing trainer and you can't do this, your airplane is out of trim.

Even in a mild breeze with some gusts, once you reach flying height, you should be able to take your hand off the stick. Yes, the airplane will move around and the breeze might push it into a turn, but it should continue to fly with no help from you.

Along this same line of thinking, don't hold your turns for more than a couple of seconds after the airplane starts to turn. Understand that the airplane turns by banking or tilting its wings. If you hold a turn too long, you will force the model to deepen this bank and it will eventually lose lift and go into a spiral dive and crash. Give your inputs slowly and gently and watch the airplane. Start your turn, then let off, then turn some more and let off. Start your turns long before you need to and you won't need to make sharp turns.

I just watch these guys hold the turn, hold the turn, hold the turn, crash. Of course they are flying in 10 mph wind, near the ground, coming toward themselves at full throttle.

Preflight check: Before every flight it is the pilot's responsibility to confirm that the model, the controls, and the conditions are correct and acceptable for flight.

Airplane:

● Batteries at proper power ● Surfaces properly aligned ● No damage or breakage on the airplane ● Everything secure

Radio:

● Frequency control has been met before you turn on the radio (this has gone away with 2.4 GHz systems)
● A full range check before the first flight of the day
● All trims and switches in the proper position for this model ● Battery condition is good ● Antenna fully extended ● For computer radios: correct model is displayed ● All surfaces move in the proper direction Conditions:
● No one on the field or in any way at risk from your flight
● You are launching into the wind
● Wind strength is acceptable (see wind information) ● Sunglasses and/ or hat to protect your eyes ● All other area conditions are acceptable

Then and only then can you consider yourself, your airplane, radio, and the conditions right for flight. Based on your model, your radio, and local conditions, you may need to add or change something here, but this is the bare minimum. It only takes a couple of minutes at the beginning of the flying day and only a few seconds to perform before each flight.

If this all seems like too much to remember, do what professional pilots do, take along a preflight checklist. Before every flight they go down the checklist, perform the tests, in sequence, and confirm that all is right. If you want your flying experience to be a positive one, you should do the same. After a short time, it all becomes automatic and a natural part of a fun and rewarding day.

I hope this is useful in learning to fly your airplane. ✈

January 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1 ■9:00 AM First fly ■3:00 PM Training night	2	3
4	5 ●9:00 AM RC Breakfast	6 SFRCF Board meeting indoor Flying 8–10	7	8 SFRCF Club meeting ■3:00 PM Training night	9	10
11	12	13	14	15 ■3:00 PM Training night	16	17
18	19	20	21 indoor Flying 8–10 ■3:00 PM Training night	22	23	24
25	26	27	28 ■3:00 PM Training night	29	30	31

Training nights are ALWAYS weather permitting, check the weather at the field before leaving
Sold days can change, check out website before heading to the field.
http://sfrcf.quintex.com/event/events.html

Club Scheduled Events for 2015

Event dates in black are scheduled.   Events in gray are complete.

The new contract allows us to schedule non-exclusive days again, however if the car clubs don't go to the new track we may not keep many.

January 1st 9:00 am ....First fly of the year - Sanderson field - Locks will be changed!

May 29th, 30th & 31st .....USSMA qualifier and Scale rally

December 10th.................Christmas Party @ the Colonial House from 6 to 10

dues $75 before **January 1st and $100 on or after**

Check out our web site at http://sfrcf.quintex.com