

The Seminole Flyer

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"The Seminole Flyer" is a publication of the Seminole Radio Control Club of Tallahassee, Florida

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Letter from the Editor- Fred Schmidt

I've been back into the RC world for about 3 or 4 years now and still enjoy all the planes I have (all electric and mostly small scale). Most of my time flying has been spent flying off water as it's very convenient for me. But lately I felt the urge to up the ante a little and try something a little bit larger with a little more "flexibility." I picked up a Carbon-Z Yak 54 and now it's time to learn some 3D (well at least try). This month's feature article provides some basics I plan to review (along with other resources you will find in URL links). Fly safe – and perhaps a little wild with 3D!

Fred

Chief Pilot - Jim Ogorek

It's HOT, need I say anything more? Just a reminder for all of you who are out flying: drink lots of water. This heat will hit you all of a sudden and you could be in trouble before you know it. If at all possible, make sure you have a buddy with you.

For those of you that don't know the field address, it is 7550 Apalachee Parkway, Tallahassee, 32311. There is not much to report on this month as most of us are staying in where it's cool....including me. I have had a couple of emails and calls about Seminole this month, some asking our policy on guest flying when visiting here in Tallahassee. I have expressed our openness for visitors to fly as long as they have their AMA. I've told them to come on out and introduce themselves. I am sure that whoever is out at the field would be happy to explain our flying area.

Others have called about assistance on purchasing a trainer and how to become a member. For those asking about a good trainer, I tell them they are welcome to come out and talk with us at the field. We might even let them experience their first time on the sticks using a buddy box system. I also mention that they should stop in Hobbytown since Frank and his crew are very knowledgeable and are more than willing to help get them started in the hobby.

In closing this month I want to just mention that the approved rules and regulations we have in place are not those of the current executive board. These are our club guidelines that have been in place since the beginning of the Seminole organization. Yes, over the years we have made additions and corrections, all for the purpose of making our hobby safe for all of us to enjoy. While it is one of the jobs of the executive board to make sure these rules are followed, it is also the job for all of us. Let's all follow them, fly safe and have a good time.

Chief Copilot- Jeff Owens

One of the fascinating things about this hobby is that there is always something new to learn. A case in point involves spins. I was having a problem with my Compensator not being predictable on the spin exit – I need exactly three turns. The plane had started dropping the right wing as I entered the stall. This resulted in a snap entry (a downgrade) and the spin would be at a faster rate than normal, which made it hard to time the exit. I tried different control throws, I checked the lateral balance, I checked my mixes, and everything seemed ok. But why would this problem suddenly materialize and what could cause it? Finally, I reluctantly examined the only remaining possibility – the pilot! I tried very carefully adding up elevator at idle to enter the stall. I watched for any tendency to drop a wing and was ready to correct it with rudder, remembering that in a full scale plane you must keep the ball centered with the rudder – not aileron since this could cause an unexpected snap entry. As I watched, the plane entered a nice stall with no wing drop! The spin was easily controlled and it came out after three turns. I did it again, being careful to add the elevator slowly and watch for any wing drop. Again, a very nice spin. And then the light bulb went off over my head. I had unconsciously been pulling a small amount of right aileron as I pulled back on the elevator! Only when I carefully focused on adding the elevator slowly did I pull the stick straight back. Interaction between the elevator and aileron is what led to many flyers, especially in Europe, to use Mode 1 (we use Mode 2) on their transmitters. Mode 1 interchanges throttle and elevator. The thinking is that the elevator and aileron controls are the most used and they should be on separate sticks. The lesson I learned is that if some unexpected flight response shows up, make sure it isn't due to the nut on the stick putting in some unwanted control inputs!

[Club Calendar](#)- The schedule reflects current Club events planned for the year to date. Check monthly for additions and deletions at the meetings and in the newsletter. For regional, sanctioned AMA events, see your AMA magazine or visit the AMA website section "Calendars".

No planned events for August

Chief Scribe- Chris Bailey

Minutes from July Meeting

Jim called the meeting to order at 7:00 PM

Both our Vice President and Secretary are not in attendance due to other commitments.

Jim thanked Frank for making all the arrangements for food and cooking tonight despite the heat.

Jim asked if all received their newsletter and thanked Fred for doing a great job. Jim also mentioned Fred has asked for ideas and articles to be included in future additions. Fred said he would be happy to research just needed some input on what to research.

With the minutes being published in the newsletter, and the absence of our secretary, Jim asked if there were any corrections or additions. Being none, the minutes were approved as published.

Bill Ashbaker gave the Treasurers' report which was accepted as given.

Old Business

Jim asked Dan for an update on the Civil Air Patrol. Dan said he is still working on it. Hope to have some sort of answer by this fall.

New business

Bill Ashbaker gave a report on our Fire Extinguishers and explained that we have purchased units that can be refilled rather than purchase new each time one is used. Currently we have 3 units. Two will be hung

and one will be in the shed for back up. The club was reminded; if you use an extinguisher please notify a club officer so we can get it refilled.

Food Expense. Discussion was started on the cost of the food at our meeting and the possibility of setting a set fee rather than guessing at the cost and breaking it down each month. A motion was made and seconded that all future meetings, the cost of food will be \$5.00 per person (just those eating pay)..

General discussion

Jim told of the call he got from the FSU engineering students thanking the club, especially Tristan and Chris Bailey for their help in the design and flying competition they participated in. The FSU team finished in 7th place and will be back at it again next year.

Charles Samaha mentioned the theft of his Futaba transmitter and other items from his vehicle in the Hobbytown parking lot.

Meeting adjourned at 7:30

Chief Treasurer- Bill Ashbaker

Seminole RC Club

Financial Statement for June 29 through July 28, 2011

Accounts

Premier Bank Checking
Premier Bank Money Market Savings
PayPal
Talquin Electric

Cash on Hand

Total Available Funds at End of Month

Income

Dues/New Memberships
Activity Sales
Meeting: Food Reimbursement
Contributions/Donations
Interest: Savings
Merchandise Sale

Expenses

Mower: Maintenance
Field: Improvements
Field: Maintenance
Field: Lease
Publications
Donations
Fees: AMA
Fees: State of Florida
Fees: Bank
Meeting: Food & Refreshments
Insurance: Mower
Miscellaneous
Utilities: Electric

Total Income

Total Expenses

Net Cash Flow

We received a dues payment from one new member, Jim Bussey. Please welcome Jim at your first opportunity.

As of July 28th, 36 members have not renewed their membership for the July 1 through December 31 half year. According to the club bylaws, a delinquent member may be charged a late fee to renew membership after the September meeting. So get your payment in by cash, check or PayPal. If you have any questions about dues, please ask or email Bill Ashbaker.

The negative \$30.00 under expenses for field improvements is due to contributions that offset part of the cost to purchase and install our flag pole. Let's give a special thanks to Don and Colleen Green and Jim Ogorek for their contributions.

We presented \$692 to the American Cancer Society. This was the result of our Flying for a Cure event. This is a good cause and given the economic conditions, we can be pleased with the results. The officers are considering ways to increase what we can raise next year.

Our new fire extinguishers were stolen. The strange thing is whoever stole them replaced them with empty fire extinguishers. We assume that the thief hoped we would not notice??? One of the used fire extinguishers can be refilled. We spent \$53.72 on an additional new fire extinguisher.

Flight Technique: Programming for 3D

By: John Reid

Reproduced from: <http://www.modelairplanenews.com/blog/2011/07/28/flight-technique-programming-for-3d>

Our main focus this time is on radio programming and setup. A key element that enables pilots to fly outrageous 3D maneuvers is the computer radio system.

Learn to take advantage of your computer radio, and you'll be able to improve your flying in a variety of ways. Having a properly set up plane with the right radio programming makes performing both simple and complex maneuvers a little easier. Let's see what we can program in and how it will help.

DUAL AILERONS

Dual ailerons allow you to program some mixes that will keep the plane on track. Yes, in some cases, this doubles the weight of the aileron servo, but not always. Depending on the plane, you don't always need a servo of the same size as you would use to power both control surfaces. You might be able to get away with using smaller and/or lighter servos because they each have to power only one control surface.

The programming advantages of having two separate aileron servos far outweigh the weight gain. When you install two aileron servos, make sure that you plug them into separate channels on the receiver. Don't use a Y-harness because it will negate the programming advantages of having separate servos. If you have a servo for each aileron, you can use the spoileron or flaperon program, and this will allow both servos to work as one aileron servo. This program also allows the ailerons to serve a dual function: with a flip of a three-way switch, you can have both ailerons drop and function as flaps while still working as ailerons. Flip the switch the other way, and the ailerons move up and work as spoilerons-again, while still functioning as ailerons.

Both mixes also allow you to program in some aileron differential. This is the ratio of up-to-down movement of each aileron. Many planes need more movement from the upward-deflecting aileron than from the downward-deflecting aileron. This allows the plane to roll true, and it eliminates unwanted yaw when the ailerons are applied.

DUAL RATES Dual rates allow you to switch from one control deflection to another. By simply flipping a switch, you can reduce or increase the amount of deflection. This feature comes in handy when you're flying a plane that is used for normal flying and hard, 3D flipping around. Standard or low rates (small deflections) are used to fly the plane smoothly around the sky; but right before you enter a big 3D maneuver, you flip a switch and then have 45-degree movements (or more) on the control surfaces. Though you might need that much deflection for the maneuver, it would be hard to fly the plane smoothly and precisely at normal speed with those deflections; that's where dual rates come in. When you've finished flying the maneuver, flip the rate switch back to standard rates, and continue to fly with lower deflections.

EXPONENTIAL Another program that works with dual rates is exponential. Exponential programming is mainly used to soften or decrease control-stick sensitivity around center stick. Without exponential, a control-surface servo will move in a distance that's proportional to the stick movement. For example, if you move the stick 50 percent of its available movement, the servo will also move 50 percent of its available travel. This is often referred to as "linear throw" or "linear movement."

Using exponential ("expo") changes the relationship between stick deflection and servo travel. With expo, you might move the stick 50 percent of its available movement, but the servo will move only perhaps 20 percent of its available travel. Of course, the servo travel depends on how much expo has been programmed in. Keep in mind that exponential settings do not change the servo travel available at 100 percent of control-stick deflection. If the

stick is at the end of its range of movement, the servo will be at the end of its available travel. Exponential changes how much servo travel you get with stick deflections of less than 100 percent.

Expo helps pilots by reducing the stick's sensitivity at center stick and allowing them to fly more smoothly with larger control throws. Imagine having large, 45-percent throws on a control surface on a plane flying straight and level. You move the stick 2 inch, and the control surface moves 1 inch, so the plane veers off-course quite a bit and makes your flight look jerky and erratic.

With expo programmed in, that slight stick movement doesn't cause any surface deflection, and your flight looks smooth and controlled. Expo also helps if your hands shake while you're flying; it prevents your anxiety from being "transferred" to the control surface.

MIXING The spoileron or flaperon program allows you to have a servo for each aileron yet still allows them to function as one. The advantage is that you have control of the rates, endpoint adjustment, centering and the amount of differential for each servo; this lets you refine your plane's flying characteristics. The Stylus's Spoiron screen is shown.

If you use the mixing function on your transmitter, you can really improve your plane's flight characteristics. These suggested radio mixes will help to improve the way the plane flies in a variety of attitudes. Radio mixing allows one transmitter control input to affect two or more flight functions. How much they affect the secondary function can also be programmed in.

RUDDER TO ELEVATOR/RUDDER TO AILERON MIX. This allows the plane to fly straight when you use the rudder, especially during knife-edge flight. To figure out what to program in, fly your plane in knife-edge. If it pulls towards the canopy or the gears, you need rudder-to-elevator mix; if it rolls to the right or left, you need rudder to aileron.

THROTTLE TO RUDDER. This mix will help the plane fly straight when at full throttle; it's generally needed when flying a vertical upline. Most of the time, you will need to mix in a little rudder input when the throttle is at full. This keeps the plane flying straight during the vertical upline. This rudder input will be activated by the throttle stick.

THROTTLE TO ELEVATOR MIX. This helps the plane to maintain a straight downline. Most planes will try to "right" themselves as they build up speed when traveling downwards. If you program in a little down-elevator when the throttle is low, you'll prevent this from happening.

That's it. By taking advantage of your computer radio's programming features, you can make any plane fly better. Check your radio's manual to see whether you have these features and how you can program them in. Then see how quickly your aerobatic routines and maneuvers improve.

The following was drawn from <http://www.troybuiltmodels.com/ns/learn/awesomepilot/3d/index.shtml> and it also contains some nice videos of various maneuvers.

Trimming out your plane for 3D flying is critical to being an awesome pilot. Right thrust and up thrust must be optimized. Perfect right thrust and up thrust for hovering is different than for sequence flying though they are close. This cannot be changed on a day to day basis, so you need to decide what is most important to you. It's easier to fly sequence with 3D right thrust and upthrust than it is to fly 3D with sequence right thrust and upthrust, so if you are primarily interested in 3D, trim the plane out as follows: On a day when there is little or no wind, fly level to the center of the field at a slow speed, pull to vertical and roll to see the canopy of the plane as if you were going to do a hammer. Let the plane slow to almost a stop. Go to full throttle and let go of the sticks and fly for several seconds. If the plane veers right or left, adjust the rudder to keep the plane vertical. Do this 10 to 20 times to be sure. Then put washers under the engine mount to put in about 1/2 the angle that the rudder is (if the rudder is deflected 4 degrees, change the engine thrust by 2 degrees). Do not line up the cowl yet with the spinner backplate. Do another flying test and make adjustments until the plane goes exactly straight up when you apply throttle. Follow the same guidelines for setting the upthrust. You need upthrust based on the CG of your plane as it hangs from the propeller. If you picked up the prop and let the plane hang vertically as in a torque roll (TR), if all the components inside the plane were in proper position, the plane would point straight up and the engine thrust line would be right through the CG. This probably isn't the case so change the engine thrust (you probably need upthrust) so that the plane doesn't keep falling forward to the belly when in a TR.

You should be good with the rudder. Learn rudder skills by following the steps above. You especially need rudder skills when the belly of the plane is towards you. Doing belly in hammer heads is good practice. Fly back and forth across the field inverted and do hammer heads at each end. Keep the uplines straight (using the rudder) and hammer while under control the direction that you choose.

If you are a competent pilot who enjoys living life on the very edge of the envelope, then 3D is for you. Your plane is always just moments away from disaster. Spectators get thrills from near disasters, and so does the pilot! 3D flying is one near disaster after the next, with a crash inevitable with one slip of the finger, one burble of the engine, one wrong move, one mechanical failure, or one gust of wind. Not all 3D maneuvers are at just above stall speed, but all 3D put the plane at more risk than sequence flying. This is very difficult, and takes a special (meaning more expensive) aircraft and equipment to do it right.

NOTE: If your plane is heavy (high wing loading) and it must dive to pick up speed before it can fly out of an aborted maneuver without snapping, then you have the wrong plane. Either lighten your plane or get a new plane. If not, you will be forced to fly too high to have fun or you will crash. If you have a 40% plane over 36 pounds or a 35% plane over 26 pounds, your plane is heavy, so be careful.

KEYS TO 3D FLYING

- The lower (lighter) the wing loading the better: lower stall speeds and better knife edge capability. The ability to fly away from a botched maneuver is important.
- The higher the power to weight ratio the better: blast out of trouble or jump out of a hover.
- The more the control surfaces move the better: faster maneuvering.
- The larger the control surfaces the better: more control of the air.
- The more powerful the servos the better: to prevent flutter.
- Digital servos: precise motion throughout the range and tighter centers.
- The faster the servos the better: faster corrections.
- The larger the fuselage side area the better: better yaw control.
- The larger the size the plane the better: less sensitive.
- A computer radio: mix out quirks, switch rates easily using one flight condition switch.
- The correct amount of right thrust: the plane must go up straight in a hover.
- Lots of money: buy the best, stretch the envelope, have a backup.
- Nerves of steel: the lower the better.
- Bulletproof airframe: don't have a mechanical failure, especially servo linkages.
- Bulletproof engine: hovering on the deck has an unhappy ending if the engine quits.
- Rearward CG: flies inverted virtually hands off for better maneuverability.
- Extensive preflight: you can't afford a mechanical failure in the air which should have been caught on the ground.

Radio Setup: Radio set up is extremely important for knife edge. You may need an engineering degree to get it right.

- Full throw rudder - 40 - 50 degrees.
- Most airplanes will roll in the direction of the rudder and will pitch towards the belly. It is extremely important to mix this out using a computer radio. Most likely the mixes must be different for different throttle settings and speeds therefore it is important to choose a speed that you will pretty much always be flying knife edge. For now, just set it up for full throttle. So, fly by at full throttle on knife edge while applying just enough rudder to maintain altitude. Do not climb or descend! When you apply let's say right rudder, most likely the plane will roll to the right (proverse roll coupling) and it will pitch down toward the landing gear. Fly in both directions and check that this is true. Then land, and then use the computer radio to add a small amount of up elevator and left elevator when applying right rudder, and up elevator and right aileron for left rudder. About 1/8" of deflection is good to start with. Then fly again and see if the computer is doing too much or too little. Keep landing and making adjustments until simply applying the rudder results in pure yaw. Now it will be simple to do knife edge! Just fly at full throttle, roll to knife edge, and hit the rudder. The plane should track in pretty much a straight line with little adjustment. Keep in mind that you will always have to do some corrections. You probably don't fly straight and level without doing corrections. The wind will blow you around, and depending on the airspeed and the amount of rudder you apply you will need to do corrections. so be prepared. ALWAYS leave the mix on. You can find more information on setting up a radio here... <http://www.troybuiltmodels.com/ns/learn/radiosetup/>.

Explanation of the Hover: This is the first 3D maneuver you should try to master. It is fairly easy to do without jeopardizing your aircraft. It will test the capabilities of your airplane, and show you its strengths and weaknesses. If the plane is too heavy it will tip stall back and forth when it is slow (called wing rock). Hovering is simply holding the nose almost vertical and the plane does not rotate like it does in a torque roll. The altitude stays the same. Even heavy planes will hover as long as the thrust of the prop is just a bit more than the weight of the plane.

Radio/Airplane Setup:

- Lots of control throw on all surfaces.
- It is necessary to have ailerons which come in close to the fuselage so that they are in the prop blast. If not, you won't have any roll control.

Hovering - step by step:

- Fly towards the center of the runway from the left or right but into the wind. Altitude should be as low as you dare. The lower it is the easier it is to see what is happening. I prefer about 20 feet at a minimum to start with. Slow the plane down, and as it starts to lose lift and drop, give it just enough elevator and throttle to not lose altitude, then keep pulling the nose up with elevator and throttle until the plane is almost vertical and is stationary. Before losing control, add enough power to slowly climb out so that you are ascending, but not moving forward or backwards. If you ascend, even very slowly, the plane is much, much more stable than when the plane is not climbing. Repeat this so that you can maintain the same altitude longer and longer. As you get better, then get lower and closer to you (a little at a time!).
- You will need to lean the plane into the wind for the best results. The higher the wind speed, the more the plane leans into the wind. I prefer it when the wind is a direct crosswind, blowing directly into my face. This way the plane is not sideways to me, but is in full view, canopy towards me. Keep the plane from rotating using a lot of aileron throw. You primarily need right aileron to counteract the torque rolling effect, though don't be bashful about using left aileron if necessary. The more horizontal the plane is, the less of a tendency it has to roll.
- If you really lose control, punch it and level the wings using ailerons before using elevator.

Explanation of the Knife Edge maneuver: This is when the airplane is flying on its side for an extended period of time without ascending or descending. Initially you will start to your left or right, and then fly along the runway. This is a key maneuver and is the basis for many of the best maneuvers in 3D. Once you master the standard knife edge, you can then move on to knife edge loops, knife edge circles, knife edge circles with snaps, and the death drop. These are exciting maneuvers that few people know how to do, and if you do them, you'll be up there with the best pilots in the world.

Knife Edge Basics:

- Once the computer radio is set up, flying knife edge is a simple task except for the corrections due to wind, airspeed and other minor stuff. Just fly by and roll to knife edge and apply the rudder. ZOOM! there you go.
- Practicing corrections: It seems weird at first, but when on knife edge, apply the elevator to do corrections. Fly in a zig zag pattern using the elevator. Fly in a circle using the elevator. Do some motions in and out with the elevators to get used to it. It takes some getting used to, so keep trying it and after a long while it won't seem so weird. Of course as you use the elevator the plane will lose speed and you must use more rudder which then will cause you to use the throttle (if it's not fully open already) and then you will use the ailerons as the plane will start to roll a little. You should fly knife edge at least one time every time that you fly! Once you get comfortable with that, we will add some more difficult stunts.

Explanation of the Flat Spin: This is not really a 3D maneuver, but they don't fly it in IMAC either, though large throws help, so I'll classify it as 3D. Use high rates on all surfaces. When you are high up, pull to the vertical upline. When you are really high, slow the airplane to a halt. Let the plane fall over. Then push both sticks to the upper corners and together. In about a second or two the plane will be spinning violently. At that time, move the aileron from the far left corner to the middle (neutral) keeping the elevator at full down.

While in the spin you need to play with the controls to find the right spot:

- 1) To flatten the spin, use some right aileron instead of keeping the aileron neutral. More throttle helps flatten the spin. If the plane is not flat enough, it will lose altitude quickly. You will have to play with the ailerons and throttle to keep it rotating. If the plane is too flat it will stop rotating. Find the angle the plane will stop rotating, and stay just a little more angle than that, say like 20 degrees.
- 2) If the plane stops rotating and tries to flip over forwards, use less elevator and/or less throttle, and keep the plane at more of an angle with the ailerons. (Continued on back page...)

To release, just neutralize the controls and go to low throttle. Once the plane stops rotating and is heading down, apply 1/4 throttle and a little bit of elevator to pull out. The pull out can take a lot of altitude, so exit pretty high until you're an expert. It's OK to exit too high, it's really bad to exit too low. If your plane doesn't like coming out of the spin, use opposite rudder and that should stop the spin right away.

Seminole Radio Control Club Member Items for Sale:

Avistar 40 trainer. ARF, BNF, RTF - your choice best reasonable offer
Hangar 9 F-22 Raptor ARFneeds new home no reasonable offer refused.
Blade 400 BNF heli here again best reasonable offer.
T-Rex 500 BNF, plus extras...\$500.00 or higher offer
Hangar 9 PTS P-51 Mustang ARF best reasonable offer.
Please call David Settles at 421-1615 after 5pm or email dsettles@yahoo.com

Seminole Radio Control Club Tallahassee, FL AMA Charter #216, 1969-2010

SRCC Officers

President Jim Ogorek
Vice President Jeff Owens
Secretary Chris Bailey
Newsletter Editor Fred Schmidt
Treasurer Bill Ashbaker
Field Safety Officer Dave Sellers

Field Hours

Electrics/ Sailplanes 9:00 am till 9:00 pm.
Gassers and Nitro 12 Noon till Dusk.
Electric Service 8:30 am- 9:15 p,m

Training Notes

To schedule a training time contact Mike Atkinson.

Flight Instructors

Primary/Advanced Flight Instructors

Mike Atkinson 926-4692
Geoff Lawrence 942-9807
Jim Ogorek 766-2477
Chris Bailey 322-4047

Primary/Advanced Helicopter Flight Instructor

John Hall 893-6457
Chris Bailey 322-4047

Ground School/Airworthiness Inst. (Fixed Wing)

Jeff Owens 894-2504

Hobby Town Flight Demonstrator

Frank Bastos 671-2030

Club Meeting Location and Time

November- March: The regular club meetings are held on the first Thursday of each month at **7:00 PM** at **HobbyTown** on Thomasville Road. The Club offers food and drinks for a small charge at 6:30.

April- October: The regular club meetings are held on the first Thursday of each month at **7:00 PM** at the Flying Field. The Club offers food and drinks for a small charge at 6:30.

Newsletter Submissions- Submissions are requested to be in M.S. Word format or via e-mail text. Photos should be in .jpg or .tif format. We will, however, accept anything to make it easier for those who wish to contribute. Submissions are due no later than the 28th of the month. Send your submissions to Fred Schmidt. schmidtfjs@gmail.com

SRCC thanks Graybar Electric in Tallahassee for its assistance in helping to upgrade our flying facility.

