

# *The Seminole Flyer*

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Academy of Model  
Aeronautics  
AMA Charter #216, 1969-2010



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

**OCTOBER 2010**

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## Letter from the Editor- Stephen Warmath

I don't know what happened to September, but I do know football season is in full swing, we have had our first dose of fall weather and I'm behind in my reporting. I did not make the progress I had hoped for on the Part II build of the Alien Aircraft Cessna 310B. I did manage to make some progress, but decided to defer the next part until next month. Jeff Owens sent in another installment of "**Pattern Talk**" to relay frustrations with mechanical problems we all encounter. As a follow up, to last month is "**Welcome Back- Part II**". The next installment is provided to give us some insight on how the hobby has changed over the years regarding airframes and engines. (Photo right) Jim Ogorek and Rick Sunderland mentor a new, young pilot. Great job guys!

Some of our members may be interested in the Linux-based semi-autonomous "Flying Robots" designed for rescue communications by the Swiss university EPFL. The project, called Swarming Micro Air Vehicle Network (SMAVNET), aims to deploy swarms of low cost small flying craft that can be deployed in disaster areas to quickly create communication networks.



Link provided by Dan Ouellet.

Details found here: <http://www.linuxfordevices.com/c/a/News/EPFL-SWAMNET/?kc=LNXDEVNL092910>

## **Safe and Happy Flying- Steve**

### **Chief Pilot-** Mike Atkinson

Great flying weather is just ahead for us. The highs in the upper 90s are starting to break for a more favorable mid 80s. This should allow more of our members to get out and enjoy the field. Remember field rules, especially on issues of courtesy to other pilots. Special thanks should be given to the few members who braved the heat all summer long taking care of the field. I don't believe I've ever seen our field looking as good as it has this season. Whenever you see them.... Mike Kinsey, Geoff Lawrence, Jim Ogorek, Gordie Meade, Tristan Seeley, and others.....be sure to thank them for their hard work in making your flying field such a nice place!

An issue has arisen regarding "first person view" (FPV) flying at the field. AMA rules are very plain regarding this activity. FPV is only allowed if the pilot flying FPV is using the STUDENT part of the BUDDY BOX, with an accomplished pilot flying as instructor. FPV should NEVER BE ATTEMPTED when flying alone or without a buddy box setup. This is not negotiable. Any future violation of this rule will be considered a willful disregard for AMA safety regulations and immediate suspension from the club will be recommended.

Electricity: We are slowly moving forward with installation of electricity at the field. Just before the latest county commission meeting, we were told the county needed a "meets and bounds" survey outlining the exact location for the easement needed by Talquin Electric. We have been able to acquire the survey, but missed the meeting earlier in the month. The county cancelled the 2<sup>nd</sup> meeting, so we'll have to wait until the October 12<sup>th</sup> commission meeting. As soon as Talquin gets the easement, they'll move forward with setting the transformer and our electrician can begin construction. All of this means we should have electricity at the field by the first of November.

The field will be closed for flying October 6<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup>. Electric flying can be done probably until noon on the 6<sup>th</sup> and 8<sup>th</sup>. The runways will be surrounded with "caution" tape to keep cars off them. The field can probably be open for flying around 3:00 on Saturday (as soon as all the cars have left the running trail). I still need a volunteer(s) to hang out at the field to make sure our caution tape stays up around the runway and heli pads while the spectators are driving around the field. I'll be out there Wednesday for the middle school runs and Saturday for the high school events, but I can't be there Friday, the 8<sup>th</sup>.

Finally, nominations for 2011 officers will begin at the October meeting. Nominations may continue up to election day, which is December 2<sup>nd</sup>. If you are interested in serving the club as an officer, please let someone know.

Happy flying, Michael Atkinson

### **Chief Copilot-** Mike Kinsey

[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".

#### **October**

- 6- Running Meet
- 7- Monthly Meeting at the Field 7:00
- 8 & 9- Running Meet
- 16- Float Fly 9:00- 2:00

#### **November**

- 4- Monthly Meeting at HobbyTown 7:00
- 6- Swap Meet @ HobbyTown 10:00
- 20- Toys for Tots Fly-In

### **December**

- 2- Monthly Meeting at HobbyTown 7:00
- 4- Running Meet

## **Chief Treasurer-** Theo Titus

*Editor's Note: The Treasurer's report is published for Members only. The public version of the Newsletter does not include account balances.*

### **Seminole RC Club Treasurer's Report**

**Period Ending**

September 30, 2010

#### **Checking Accounts**

Capital City Bank	\$0.00
Premier Bank	\$0.00

#### **Savings Accounts**

Capital City Savings	\$0.00
Premier Bank CD	\$0.00

#### **PayPal Account**

\$0.00

#### **Funds for Deposit**

\$0.00

#### **Petty Cash**

\$0.00

#### **Total**

\$0.00

#### **Checks Outstanding**

\$0.00

#### **Net Funds Available**

\$0.00

#### **Income**

Dues / New Memberships	\$0.00
Activities / Fly-ins	
Sales (Hats-shirts-etc)	
Contributions and Donations	
Interest on Savings	\$0.00
Interest on Checking	\$0.00

#### **Total Income for Period**

\$0.00

#### **Expenses**

Plaques and Awards	\$0.00
Field Maintenance	\$0.00
Repairs and Supplies	\$0.00
Miscellaneous Expenses	\$0.00
Bank Charges	\$0.00

#### **Total Expenses for Period**

\$0.00

## **Chief Scribe-** Geoff Lawrence

The September meeting was called to order at 7:02 pm on Thursday, September 2, 2010. Welcome visitors Dave Bilsky and Bethany, Brian Walsh, Jeff Traveras, and David, Jen, Christopher and Daniel Porter.

Theo Titus read the treasurers report. Theo stated the new club roster was a work in progress. Motion to accept the treasurers report was made, seconded and passed.

Geoff Lawrence stated the minutes of the August, 2010 meeting were posted in the current newsletter. Geoff corrected the name of the club member making the motion to appropriate funds for electricity from Chris Smith to Michael Hupp. With no other questions or corrections a motion to accept the minutes was made, seconded and passed.

### **Old Business:**

- Jim Ogorek gave an update on the electrical power installation. Jim said all paperwork has been submitted to the County for approval at the 9/14 County Commission meeting. Our neighbors have signed and notarized the documents needed for their approval. The estimated new costs total \$7200. The solar estimate for a comparable system came in at \$11,000 not including necessary inverters. AMA will reimburse up to 10% of our costs.

### **New Business:**

- Frank Bastos scheduled the Toys for Tots Fly In for November 20<sup>th</sup>. Frank will coordinate with the Marines and Jim Ogorek will notify the press and create flyers.
- Fred Schmidt discussed a Fall Float Fly at Lake Monkey Business set for October 16. Fred said he could set it up but will be unable to attend that weekend. Fred also stated we're invited to fly electric park flyers at a Fall picnic in Tequesta Park but we need to make a commitment in advance. Jim Ogorek will meet with the neighborhood association to coordinate both events.
- Jim Ogorek scheduled a Swap Meet at HobbyTown Tallahassee on November 6<sup>th</sup>.
- As Safety Officer, Jim Ogorek reminded everyone with school back in, the runners are back at the Cross County Track. Jim asked that if anyone has an aircraft fly away or crash outside our flying area to please send him an email so the officers will not get blindsided with an incident they have no knowledge of should anyone outside the club witness it or find the crashed aircraft. Farley Light reminded the club it is an AMA requirement to post your name, address, phone number, and AMA number in or on your aircraft.
- The lack of fire extinguishers was brought up. Frank Bastos will donate one and Jim Ogorek will handle.

### **Announcements:**

- Congratulations Gordy Meade. Gordie placed 8<sup>th</sup> in the AMA Helicopter Nationals held in Muncie, Indiana
- Bob Burke discussed the need to pressure wash the storage container. Clarke will check with his neighbor in the business for an estimate. A motion was made to spend up to \$150 to wash the container.
- Big thanks to Bob Burke for the new retrieval boat, oars, and boots.

With no more announcements and no more business, the motion was made, seconded and passed to adjourn at 7:48 pm.

## **Pattern Talk** by Jeff Owens

This month I've decided to relate a few stories about mechanical problems that I have encountered recently. It seems that no matter how long you have been in this hobby, the models will still have a few tricks to play on you. Some can be quite frustrating.

The first instance involved my Compensator pattern plane. Earlier this year I switched from my OS 55 AX to a pumped OS 91 four stroke. There is a certain learning curve involved in setting up and running these engines. On top of this, the engine was new and needed to be broken in. The first dozen or so flights went

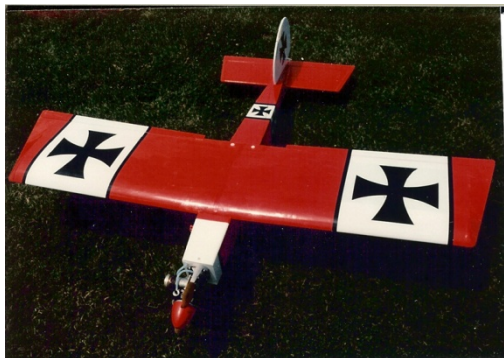
well and I was starting to become comfortable with the new-found amount of power, as well as the slower, but relatively constant, flight speed through vertical maneuvers. Then, the engine started acting up. It would lean out at seemingly random intervals and lose power, only to surge back to full power shortly thereafter. I tried adjusting both the high end and low end needles, but this had no effect on the problem. In frustration, I called up a friend in Georgia who runs the same engine and he talked me through the setup while I adjusted the engine on one of the starting tables. Still no solution. So, in near desperation I swapped out the engine for my backup OS 91. It actually took only about 15 minutes at the field. I started the second engine and, to my shock, it performed in exactly the same way! As I watched it on the starting stand at full throttle it would suddenly lean out and drop about 1000 rpm, quickly followed by a surge in rpm with a plume of exhaust indicating that it was rich. It kept this process up for a minute or two before I shut it down. It was almost like it was breathing! And then the light went on. That night I pulled the tank and almost instantly went into a fit of laughter. The overflow line connects to a piece of brass tubing that is bent so that it sits near the top of the tank. Somehow, the tubing had shifted so that it was firmly fitted against the top of the tank. Now, when I used muffler pressure on the OS 55 AX this would never cause a problem since the tank was pressurized and would expand slightly away from the tubing. But, the 91 four stoke is a pumped engine and the pump sucks the fuel from the tank. The top of the tank would then be sucked firmly over the overflow line so that no air could enter the tank. Hence, the engine would go lean. As the rpms dropped the pump would draw less fuel and the tank would relax, allowing air to enter. So, indeed, the engine was breathing, after a fashion. A quick adjustment to the tubing solved my problem and the engine has run well with the original needle settings.

The second problem occurred shortly thereafter. Midway through a flight the engine would sag momentarily as if it was getting a bubble in the fuel line. Thinking I was low on fuel I would land, only to find the tank about one-third full. This was a new and rather strange problem. Suspecting the tank, I pulled it and noticed that the klunk was very near the end of the tank, almost touching the rear wall. Now, there is a slot cut in the klunk so that fuel can flow even if the klunk touches the rear wall of the tank. Nevertheless, I pulled the fuel line about 1/8 inch forward so that the klunk was free to swing. That fixed the problem.

The third problem is one that can get any of us at any time. I was putting in a practice flight when the engine went dead. No cough or sputter – it just quit. That is very strange, since the OS 91 runs very dependably when it gets fuel. I landed without incident and immediately saw the problem. Two of the bolts that hold the mount to the firewall had backed out almost completely, allowing the mount to swing away from one side of the firewall. As it did this it pinched the fuel line – instant dead stick! Tightening the bolts solved that problem and I was quickly back in the air.

Is there a lesson to be learned here? Sure – several in fact. One is to know your equipment and how it functions. I had never had an engine that pumped fuel from the tank – I either had muffler pressure or crankcase pressure (as with YSs), both of which put positive pressure in the tank and force the fuel out. So the overflow line tricked me. Now I know another item to look for. The klunk situation could happen to anyone – this is just something to check. And the mount bolts coming loose can likewise happen to anyone. Checking the plane over for loose bolts should be a part of routine maintenance. So there you have it – know your equipment and maintain it well. The crash you prevent may be your own!

## **Welcome Back! We Missed You! Part II- Airframes and Engines** By: Frank Granelli







We are glad you returned to model aviation. The sport missed having you as part of us and I am willing to wager that you missed many of its benefits such as relaxation, great friends and the sense of achievement gained as your creation takes to the air.

### ARF RTF and BNF?

Let's talk about that creation and how it has changed in the last twelve years. Remember that twelve years proved to be the average time most returning modelers spent away from model aviation before returning. While many Almost-Ready to-Fly (ARF) "kits" were available in 1997, the subject selection was somewhat limited. Sure, there were a few Mustang ARF kits available, but how many B-25 ARFs were around? Try zero while there are at least two today. The Ready-To-Fly (RTF) concept had not yet truly taken off.



Photo 1

Also, many ARF airplanes were heavy, had poorly lifting wings with heavier wing loadings and were difficult to repair. Much of the construction was printed paper over thin foam that was wrapped around a heavy wooden structure such as the Zero in photo 1. Ding this type of wing and it could have been a permanent problem.



Photo 2

Conventionally constructed ARFs, heat shrink covering over wood frames, were just beginning to become available. Even so, colors remained hard to match when performing repairs using the colors available in this

country. Try matching the blue color in the mid-90's Chipmunk pictured above. About the only color that came close was the Oracover® found only in Asia; not even the European colors matched. The covering was also much heavier than that builders used.



Photo 3

There was another class of ARF aircraft that are very rare today. These were the all soft-foam airplanes sold by several companies. The foam construction was white and the modelers had to either paint them or cover them with a foam-safe, low-temperature covering. These airplanes were somewhat less “ARF” than modern ARFs yet more “ARF” than a wood kit. Note: the foam used was very soft and not the foam used in today’s “Foamies”. The Spitfire’s wing was covered in fiberglass for strength and then painted. The fuselage used tan low-temp heat-shrink covering, sanded and painted olive drab in spots. Very heavy.



Photo 4



Photo 5

Travel forward to today and wow, have things changed! The ARF selection is huge! Just about any airplane that was ever produced in quantities higher than ten is now available. Maybe that is hyperbole but you get the idea. A quick look through any manufacturer’s catalog will tell you the ARF selection is nearly unlimited. There must be twenty Mustang versions available in all sizes from small electrics (another new change) to 80-inch+ monsters. Even the 92-inch A-26 Invader in photo 4 is an ARF as is the 76-inch P-6E Hawk (sadly no longer available).



Photo 6

The [Great Planes P-6E Hawk](#) is a good example of another fact of ARF life the returning modeler should know. Unlike the popular wood kits of the past, an ARF's life span is short. An ARF is manufactured to meet a given demand for that particular model. Once that demand is met, sales for a particular ARF decline rapidly. Unlike a wood kit that takes little warehouse room in its small box, ARF's take several times the warehousing space and storage cost. Once sales drop, it is no longer feasible to continue selling that particular airframe.

So remember this well if you see an ARF you really covet, GET IT NOW. DON'T WAIT! This is especially true of the less famous airplanes like the JU-87 Stuka (once a Great Planes ARF) or even of the more popular P-47D Thunderbolt in photo 6 (also sadly no longer available).



Photo 7



Photo 8

Along with the ARF explosion came a new type of aircraft: The Ready-To-Fly (RTF) airframe that has the power and radio systems already installed. One of the key definitions of an RTF airplane is that no glue or tools more sophisticated than a screwdriver or wrench are required. 98% of the work is already factory completed. The [Arrow](#) and [Alpha 60](#) pictured above are both RTF airplanes (the Alpha 60 is now only available as an ARF). Click on the blue names that are links to the Sport Aviator articles to learn what assembling an RTF airplane is like.



Photo 9



Photo 10

The famous [NexSTAR](#) is another RTF airplane that introduced a three-axis stabilization system that automatically returns the airplane to level flight once the controls are released. The very popular [ElectriStar](#) introduced electric power to the full-size RTF realm.





Photo 11

Both aircraft are still available as RTFs. The same is true of the [T-34 Mentor](#), another electric-powered RTF that has proven valuable as a Basic Trainer.

While each article link reviews assembling that particular RTF airplane, you might want to check out the more generic Sport Aviator article, "[How to Assemble Your First RTF Trainer](#)" in the Pri-Fly Section

It may seem counter-intuitive since RTF airplanes are more expensive, but most RTF life spans are longer than that of the average ARF airframe. That is because almost all RTF airplanes are either Basic Trainers or Advanced Trainers. Good Trainers have very long life spans. The 40+ year old [SIG Kadet](#) is now a popular ARF as is the [Goldberg Falcon 56](#). Therefore, the RTF trainer you prefer will probably be around for a while should you ever need a replacement during your learning process (hope not). The same is true of ARF Trainers unlike sport ARF airframes.

The T-34 is also an example of a totally new class of RTF aircraft called either Bind N' Fly or Receiver-Ready. Before Bind N' Fly, there were the Plug N' Fly RTFs. The underlying concept is that the airplane assembles as an RTF including the installed servos and power system, but lacks the transmitter. The Bind N' Fly concept includes a 2.4 GHz receiver that must be bound to your JR or Spektrum transmitter. Receiver Ready (Futaba) aircraft and the Plug N' Fly aircraft need both your transmitter and receiver but are otherwise RTF airframes.

Since the receiver (sometimes) and transmitter are not furnished, these RTF aircraft are cheaper than a true RTF. Yet, they incorporate the ease of construction of an RTF. In case you are wondering how quickly a full-size RTF can be built, my own record assembly time for a glow-engine RTF is 17 minutes on a friend's Arrow.



Photo 11A



Photo 11B

There are also some Basic Trainers called PTS (more initials?) from Hangar 9 *only*. PTS stands for Progressive Trainer System trainers. Both the [Mustang](#) and [F-22](#) pictured above are PTS trainers as is the

T-34. Each RTF airplane is equipped with removable leading edge cuffs that increase lift and/or wing area. Flaps are also available for increased lift and drag to slow and stabilize the airplane. The Mustang even has speed brakes on the landing gear legs.

As your piloting skill improves, each device can be removed in turn increasing the airplane's speed and reducing the lift. Eventually, the pilot ends up with a true scale airplane that is harder to fly than the trainer version but is still easy on the ole` stick fingers.

### Making a Choice?



Photo 12



Photo 13

Which one should the returning pilot choose? RTF, ARF, other RTF formats? Of course, the answer is that depends. But depends on what? If you have been away for only a few years and have modern equipment, you probably do not really need to start with either a Basic or Advanced Trainer. If your radio is modern and in good shape, go straight to the sport ARF's as found in Sport Aviator's On The Flight Line or Park Pilot Sections. The [SIG 4-STAR 40](#) and [60](#) or the [Goldberg Tiger II 40](#) and [60](#) are great starting points for you and will probably be the airplane that opens every flying "season" regardless of how advanced your airplanes become in the future.



Photo 14



Photo 15

If you have been away for more than five years and/or do not have good modern radio systems, or only really just soloed before you had to leave, a good RTF Advanced Trainer like the [Pulse XT](#) or the [HobbyStar 60 Mark III](#) might be just perfect. The PTS system is also a good fit here. While you are flying and learning on the RTF Advanced Trainer, pick out a good Sport ARF aircraft and build it during your learning flights. The Advanced Trainer, with its symmetrical airfoil and resultant aerobatic capabilities, will stay current for years to come.

If you have really been away for twelve years or more, your radio systems are suspect. Your flying skills are very rusty and today's airplanes with their more powerful motors/engines will make things happen very quickly. In this case, you might want to consider getting an RTF Basic Trainer like the Alpha 40 with the 2.4 GHz radio system or Tower Hobbies Trainer with the Futaba FASST radio system. The PTS airplanes also fit well here and will grow with the returning pilot.

### **How Good Are These ARFs?**

"OK, so these things exist. Just how good are they. Most ARFs I remember were pretty bad flyers and difficult to repair and initially expensive." Happily, things have changed. Most of today's ARF and RTF airplanes are built just as most modelers would have built them from wood kits. The fuselage frames are made from strong, light weight plywood. The formers are not solid wood but 1/4-inch plywood framing. The plywood fuselage sides have giant lightening holes.



**Photo 16**

The wing structures are balsa or light weight plywood ribs over hardwood spars. Many ARF airplane wings still use the layered plywood spar joiners from the old days. However, increasingly more ARFs and all RTF aircraft use either a steel rod or aluminum tubing instead.

Both the wing and the fuselage are jig built so they are straighter than we could make them. Most use either MonoKote® or UltraCote® coverings that are easily matched. Many ARFs list the covering colors in the photo instruction book just in case any repairs are ever needed.

In short, today's ARF and RTF airplanes are built better, stronger and lighter than 90% of modelers could do themselves. In addition, they are extremely inexpensive considering the work involved. An RTF Tower Hobbies trainer costs under \$300 ready to fly. Other RTF trainers cost less than \$400 complete but have either more sophisticated radio or power systems.

The most expensive electric-power trainers like the [NexSTAR EP](#) or the [T-34 Mentor](#) are just over \$500. The NexSTAR EP includes the auto stabilization system and the T-34 can grow with the pilot into a true scale performer. Read the reviews on these airplanes for more complete details

If you have not already, I strongly suggest trying an ARF or RTF airplane depending on your situation. But if you simply must build your new trainer, SIG still offers the LT-40 wood kit. Balsa USA offers the wood kit Swizzle Stik and Goldberg still offers the Eagle trainer. All are great airplanes. But when you build them, be sure to install one of the best improvements in RC low these many years.

### **Dual Aileron Servos – Don't Miss Out**

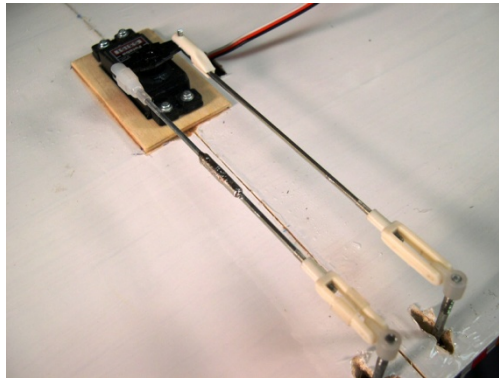


Photo 17

What is that improvement? Remember that center aileron servos used to control both ailerons in all the older airplanes? It worked well when extra servos were both heavy and expensive. But today's servos are neither.

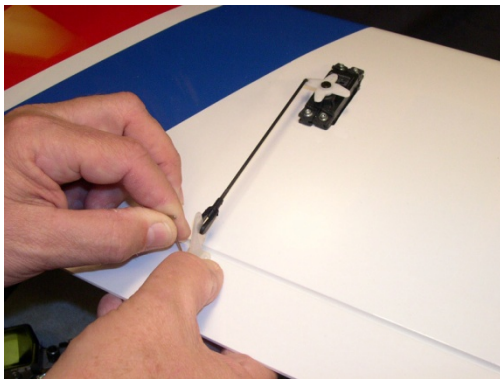


Photo 18

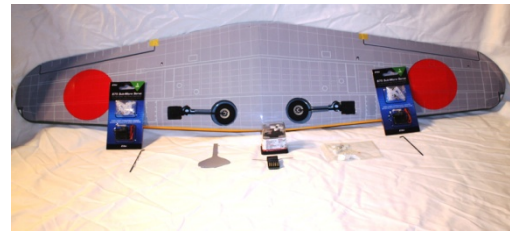


Photo 19

Many modern airplanes use two aileron servos. Each controls one aileron. There are several advantages in this system:

- 1) Any "slop" or play in the linkages is eliminated. Aileron control is precise and aileron trim is exact.
- 2) Using a "Y" cord, even four-channel transmitters will work with this system.
- 3) If the servo arm is offset slightly towards the wing's leading edge, the ailerons will move further in the "up" direction than they will downwards. This helps eliminate [adverse yaw](#), especially on flat-bottom wings.
- 4) If a computer transmitter is employed, the servo arms can be centered and the transmitter travel adjustments used to create the aileron differential needed to prevent adverse yaw.
- 5) The same computer transmitter can be set to "drop" the ailerons as flaperons, slowing the landing speeds and making pin-point landings a lot of fun. The flaperons can also be set up as those on a Control Line Stunt airplane making the elevator more effective and allowing tight square loops and awesome inverted spins/blenders.
- 6) High performance airplanes such as Pattern and IMAC scale aerobatic aircraft benefit from reflexing the ailerons upwards as spoilers in high-wind conditions. These light wing loading performance aircraft become easier to land where and when required using the spoilers.

### Wing Improvements

Remember when scale aircraft were heavy and would "snap out" given the slightest excuse? It turns out that using full-scale airfoil information to design model airfoils was not the best thing. The poor flying characteristics that resulted used to be called the "Scale Effect". Now we know that the Reynolds Number, the number of air molecules that it takes to cover a particular airfoil one layer thick, does make a huge difference.



Airfoils that were gentle when used on full-size aircraft would become real killers when reduced to model size. Several companies and universities have done, or sponsored, research on airfoils in our size range. The result is a whole new series of airfoils that have, among other changes, their center of lift farther forward, remain thicker throughout the wing chord and use blunt trailing edges for stability.



Photo 20

If you have not flown them yet, you will be amazed at how gentle and forgiving even large scale warbirds are with these revised airfoils. Even sport airplanes have become true performers without any difficult handling problems.

If you doubt the effect the new airfoils have had on model aviation, look at photo 20. Click on it to expand it. Notice how high the nose is? This 16 pound plus P-47 is holding a positive attitude of about 25 degrees as it flies by the camera. The airspeed is less than 15 mph. Can you imagine any big scale fighter from the 1980's or early 1990's doing this without stalling, hard?

Of course you can't. But this airplane just cruised by needing nothing but a little "up" elevator and throttle to slowly fly by the camera. The flight path was rock solid and needed no other corrections or control inputs.



Photo 21



Photo 22

Another change has helped improve our airplane's flying abilities. Look at the stabilizer area on the Ugly Stik pictured in photo 21. Compared to the wing area, it is fairly small and has a low aspect ratio (span to chord ratio). Note the increased stabilizer area, and higher aspect ratio, on the modern Cherokee in photo 22. Today's airplanes have much larger stabilizers compared to years ago. The larger stabilizer areas and increased aspect ratios provide increased stability and give even the flat stabilizers a little more lift.



Photo 23

While increasing a flat stabilizer's lift is good, using an airfoil stabilizer is even better. An airfoil provides true lift that lowers the wing loading on the entire airframe while increasing stability. Most scale airplanes today use airfoil stabilizers and vertical fins as shown in photo 23. All the older Top Flite fighter designs for example, have been converted from flat tail surfaces to airfoil ones. As a result, their handling has remarkably improved.

The moral of these little adjustments? *Don't be afraid of any scale ARF* you want because it may appear to be a daunting task to fly. Airplanes designed in the last 10-12 years fly like pushing a baby carriage. Even the A-26 Invader or the B-25 Mitchell fly like Advanced Trainers. Well, they do as long as both engines are tuned and working.

### Engines

We'll keep this section brief. Today's glow engines are more powerful and reliable than those of 12-20 years ago. Their idle mixture adjustments are more defined and effective. Properly tuned, a .46 glow engine running on 15% nitromethane and 18-20% oil fuel should idle all day at no more than 2,300 rpm on an 11 x 6 in. propeller. That might have always been the goal, but now that goal is practical.

Power output is also surprising. An O.S. Max 46 AX, running on the fuel detailed above, will reach ~11,700 rpm on an APC 11 x 6 in propeller. Expect above 12,500 on a 10 x 6 in. That is about 1,000 rpm higher than the 1995 O.S. Max FSR version.

Even more surprising is the near absence of 60-size airplanes today. There are a few sport airplanes in that size such as the Pulse 60, the 4-Star 60 and the Tiger 60. These are 70+- inch span airplanes about 10% larger than what were known as 60-size, (64 inch span), airplanes twelve years ago. That is because the engines produce about 10% more power now than then. Have you ever known an airplane designer to not utilize all the available power?

The older 64-inch span airplanes are powered today by the new crop of .52 to .55 sized engines. The good thing about this displacement class is that most of them are packaged in 40-sized crankcases. The power to weight ratio of these engines makes the old style 60-engines nearly obsolete.

Four-Stroke engines are still popular but are more reliable, less trouble prone and just a bit more powerful. They still sound great but use mufflers now to be extra noise-friendly. An extra benefit from their popularity is that just about all fuel manufacturers now make all-synthetic oil fuels designed not to foul these engines. Such fuels usually contain 20% nitromethane. Experience has shown that the 5% nitromethane increase eases transitions from idle to high power and stabilizes idles in the 2,100 rpm range.



Photo 24



Photo 25

While four-strokes remain popular, small engines in the .20 and under range have all but disappeared. That is due to the rising popularity of electric-power. That is a story unto itself and too long for here. The two airplanes pictured above would have been powered by the Cox TD 0.51 twelve years ago, but not now. Check Sport Aviator's Flight-Tech section for several articles on electric power. Articles cover motor/ ESC (speed control)/battery selection, battery types and their maintenance

Look over the electric-power airplanes listed in the On The Flight Line and Park Pilot Sections. Each review details the electric power information including motor, propeller, ESC and performances. There are a lot of surprises to, and even more useful information for, a returning modeler about this new form of propulsion.

Part III will cover living in the world of ARFs, electric power for sport use and the attitude changes a returning modeler will discover. Some flying techniques will put everything together as well. See you then.



## HobbyTown Corner by Jim Ogorek

Safety note; It has come to my attention there are some new fliers coming out to the field and asking to fly that do not have their AMA license , nor are members of the club. While we have been gracious about flying them as potential members and students, we are not covered by insurance if they get into trouble and cause damage. One of our members, preferably a listed instructor, must be at their side or buddy boxed. The AMA, plus I believe the club, has a limit on the amount of free flights a potential member can have before signing up. With so many of the newbie's coming out with park fliers, a dollar a month is not too much to ask to be a SRCC member.

I am charging all of us to question the new guy if he or she has their AMA membership as a minimum to fly at our site. It is not only our club rule, but a requirement of the Leon County Parks Commission.

# Seminole Radio Control Club

## Tallahassee, FL

AMA Charter #216, 1969-2010

### SRCC Officers

President – **Mike Atkinson**  
Vice President – **Mike Kinsey**  
Secretary – **Geoff Lawrence**  
Newsletter Editor – **Stephen Warmath**  
Treasurer – **Theo Titus**  
Field Safety Officer- **Jim Ogorek**

### Field Hours

Electrics/ Sailplanes- 9:00 am till dusk.  
Gassers and Nitro- 12 Noon till dusk.

### Training Notes

To schedule a training time contact Mike Atkinson.

### Flight Instructors

Mike Atkinson- Primary/ Advanced Flight Instructor (Coordinator)	926-4692
Geoff Lawrence- Primary/ Advanced Flight Instructor	942-9807
John Hall- Primary/ Advanced Helicopter Flight Instructor	893-6457
Jeff Owens- Ground School/ Airworthiness Instructor (Fixed Wing)	894-2504
Frank Bastos- Hobby Town Flight Demonstrator	671-2030
Jim Ogorek- Primary/ Advanced Flight Instructor	766-2477

## 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. Vector art accepted in Corel, Illustrator and AUTOCAD format. We will, however, accept anything to make it easier for those who wish to contribute. Submissions are due no later than the 28 th of the month. Send your submissions to Stephen Warmath [sswarmath@comcast.net](mailto:sswarmath@comcast.net)

Hard Copy Printing of the SRCC  
Newsletter provided by Apogee  
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ap-o-gee (n) - The farthest or highest point; the apex.

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