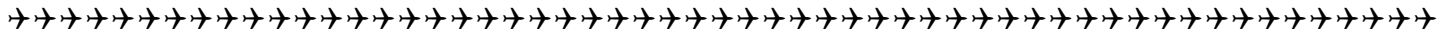




# Squadron News May 2018

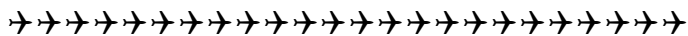
An AMA Gold Club



## Newsletter Editor.

Hello everyone, I'm John Lawyer and I am going to be taking over as the newsletter editor. I will admit I am terrible with names, so if I get your name wrong in the newsletter I apologize beforehand. If I get other facts wrong, I apologize. If you send me an email or hand me a note on any corrections, I will be glad to get it into the next newsletter. Besides, that will help me to take up space in the newsletter also. ☺ You can contact me at [jlawyer41@att.net](mailto:jlawyer41@att.net) or 765-918-7229

I will always be happy to take input from anyone for the newsletter.



## Upcoming Events

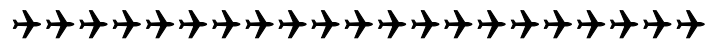
- June 6 - Monthly club meeting
- June 30 - 11th Annual Blacksheep Warbird Fly In.
- July 4 - Independence Day cookout
- August 1 - Monthly club meeting
- August 11 - 6th Annual R/C Airshow to benefit HVAF (Hoosier Veterans Assistance Foundation).
- August 18, 19 - Terre Haute Airshow featuring the Blue Angels

August 25 - Indy RC Modelers Toys for Tots Fly In

September 1 - Warrior Day at AMA National Flying Site -NOTE date change.-

September 5 - Monthly club meeting

October 3 - Monthly club meeting



## May 2018 Meeting Minutes

*Recorded by John Lawyer Newsletter editor.*

The May 2018 club meeting was held on May 2<sup>nd</sup>, 2018 at the Flying Field Clubhouse. President Rege Hall called the meeting to order at 7:34 PM. .

### President's Report

- No report

### Vice President's Report

- No Report

### Treasurer's Report

- John Edwards gave us a summary of the club's treasury. \$3000 in Checking and \$400 in petty cash.

### Secretary's Report

- No report.

### Field Marshall's Report

- No report.

### Safety Coordinator's Report

- No report.

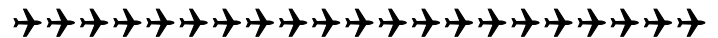
### New Members/Visitors

**Old Business**

- Rege gave a thanks to everyone that helped with the Highway Cleanup. Said it wouldn't be as bad for the Fall Cleanup.
- Rege then asked to see how many had contacted the Congressman or Senator to encourage them to retain the CBO 336 rule exemption. He said with that exemption we have a letter to the Indianapolis Airport that covered us flying so close to the Hendricks county Airport and we do not have to contact them each time.
- We still have to have FAA registration for any aircraft over .5lbs. If you registered before, it is still in effect for the full 3 years before you have to re-register. There is a link to the FAA site on the Website.
- Scott Black then gave a report on the Spring Fling at the Avon Park. It will be electric float flying only. No flying further back in the park as happened a few years in the past. It looked like no rain and prefect weather for Flying on Saturday. The Indy Admirals will be there with electric race boats, Scale ships and Sailboats. The Indy train club would but up a display by the Main building and the Track 36 has been redone and ready to go. 8 Traxx Slashes have been donated for the general public to have a try with. There will be many giveaways for the end of the day to those that participate. You must register up front to enter the drawing. If you are going to park by the lake you must be there by 10:30 and will have to remain until after 4pm. All others were asked to park out front. There will be a small electric generator to help with recharging. Rege had the AMA sanctioning for the fly-in and you must be AMA to fly. If bad weather, there will be a decision by early afternoon on Friday and the American Legion will have a food stand.

**Field reminders:**

- If you should ever have to call 911 (or order pizza), our address is 178 E. Twin Bridges Rd
- If you are the last one at the field, be sure the clubhouse door is locked and the front gate is locked.
- Fly safe, the AMA safety rules are posted by the door of the clubhouse.
- If flying on 72 mhz, be sure to use the frequency board.
- There are fire extinguishers located just inside the clubhouse door.
- If you see trash or cans lying around, please pick it up. Let's all keep our field beautiful.
- Try not to overflow gas, glow fuel or smoke fluid on the grass, causes bare spots.
- Be cognizant of others.
- **Watch for full scale planes. Avoid any interaction.**
- Please put aluminum cans in the bins that are located in the clubhouse and by the trash cans, we are recycling the cans to help pay for gas for the mowers.



**A few pictures from the Avon Float fly.**

**New Business**

- It was decided to have the Memorial Day cookout on the Sunday of Memorial Day weekend with eating at noon and Monday as the rain date.
- The Warbird fly-in is scheduled for June 30<sup>th</sup>.
- The Windssock is ready to go up and will be put up shortly.
- Bill Clontz is working on getting the food lined up for the Aviation Day/ Hoosier Veterans Association Foundation Day meals and asked for help with getting the donation jars dropped off for people to start filling.
- Bill was also looking into AC for the Club house.
- Also it was mentioned to build a new sign for the Field entrance and Rege gave the go ahead.

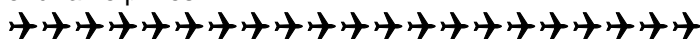
**Show and Tell**

- No show and tell.

With no further club business, the meeting was adjourned and we returned to flying

The June club meeting will be held on Wednesday, June 6<sup>th</sup>. The meeting will be held at the Flying Field Clubhouse and will begin at 7:30 PM. Please note the change in start time.

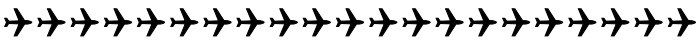
One last reminder, please support your local hobby stores. Special thanks go out HobbyTown USA in Castleton for extending a discount to our club for our monthly and year end raffle prizes.







Everyone seemed to have a great day and it was a great day for flying.

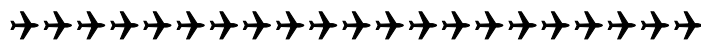


**Some Pictures from Joe Miller.**

First is of me working on my new A-26 at the club field then the rest are from the Avon spring fling.







From Model Airplane News

## Flying with Flaps — Understanding their use.

Model Airplane News

Featured News, Flight Techniques, Nick Zirolì, Top Flite  
2 Comments



Also from Joe Miller are a couple of pictures of his new B-24. He said it had a perfect Maiden flight.



Sooner or later, many RC modelers try their hand at a scale subject, and since most full-size aircraft use flaps, their scale model should include them as well. A scale model with the flaps fully deployed is an impressive sight. This will most likely be the pilot's first exposure to flaps since most of our sport models don't use them. Flaps are terrific; they can transform that hot P-51 from a bear to a pussycat on landing. They can, on the other hand, present problems if misused.



**This impressive Westland Wyvern is the work of David Wigley. The model weighs 50 pounds and features scale Fowler flaps, which increase both drag and wing area when deployed.**

Next time you fly in a large commercial airliner, take note of the transformation of the wing prior to takeoff and landing. Airliners or other fast aircraft achieve their eye-popping performance through the use of small, thin wings. The problem with this type of wing is that they stall at high speeds and consequently the takeoff and landing speeds are also very high. When flaps are lowered they change the wing's lift and drag characteristics and lower the stall speed.



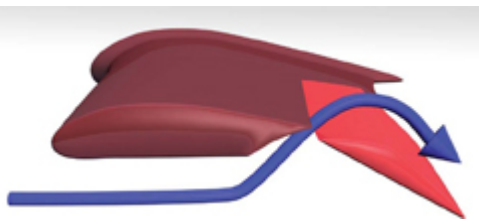
By changing the camber of the wing, the lift and drag are increased for a given airspeed. As a result of these changes the aircraft can land at a slower airspeed, fly a steeper landing approach and use more power on landing, which is a good thing if you have to go-around with your model.



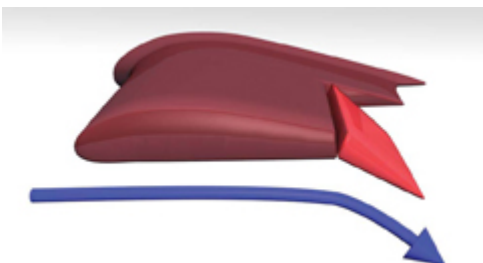
The BH Models Trojan slows to a crawl with flaps deployed.

## FLAP VARIETIES

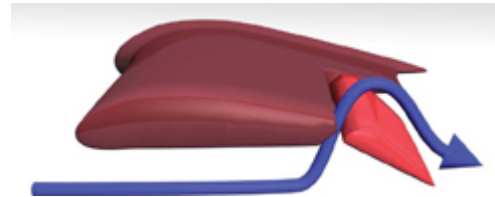
There are four basic types of flaps: plain, split, Fowler and slotted. The plain flap is simply a hinged portion of the trailing edge. Split type flaps are hinged at the bottom of the wing and create much more drag than plain flaps. The slotted flap is similar to a plain flap, but has a slot between the wing's trailing edge and the flap. The air passing through the slot delays the airflow separation and creates a greater increase in lift with a smaller increase in drag than a plain or split flap. Fowler flaps extend aft and down increasing the wings area and provide large increases in lift with a minimum of drag.



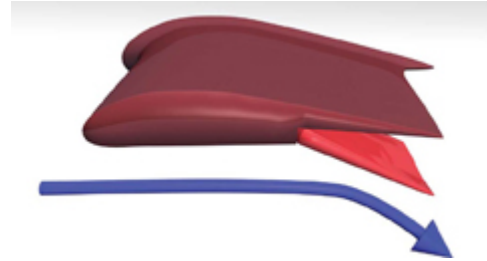
Fowler flaps move rearward and downward increasing the wing area and curvature.



Plain flaps lower the wing's trailing edge increasing its curvature and, therefore, its lift.



Slotted flaps allow high-energy air to flow from underneath the wing up and over the flap to help prevent airflow separation.



Split flaps generate a lot of drag by disturbing the airflow on the underside of the wing.

Deflecting flaps will cause a twisting action to the airplanes' wing. The type of flap as well as the wing's design will determine the amount of twisting action, with the split flap generating the least amount. Deploying the flaps may result in the plane pitching up or pitching down. The elevator must be used to compensate and keep the plane on the desired approach path. Another characteristic of flaps is that the first half of the flap's deflection results in a greater increase in lift while the second half results in a greater increase in drag. Flaps also impart a large structural load on the plane and should only be used at a lower airspeed. Full-size planes have their air speed indicators marked for safe flap operating range.



The Top Flite B-25 Mitchell bomber has inboard and outboard flaps and lands like a trainer.



**Nick Zirolì greases another landing with the help of the effective flaps on his Skyraider.**

### **FLYING WITH FLAPS**

Since every aircraft reacts differently to flaps, it's important to learn how yours reacts before committing to landing. The safest way is to do a no-flap takeoff and fly your model around to get comfortable with it. At a safe height, reduce the throttle to about 1/3 and let the plane slow down. Next, add 1/4 flaps and see what your plane does. If it balloons (pitches nose-up), apply some down-elevator to help maintain the airspeed. Once the plane is under control again, add full flaps and be prepared to adjust the elevator pressure on the stick. You may be surprised how much elevator it takes to compensate for full flap deflection and how much the plane will slow down. With today's radio systems, it's easy to program a mix for the proper amount of elevator trim when the flaps are dropped. This will greatly ease the pilot's workload.

Once you are comfortable with flying the plane with the flaps down, it's time for the landing. If you have your flaps set up to drop in increments, such as a dial or slider switch, add about 10 degrees on downwind after the plane passes your position and then add about 20 to 25 degrees on base leg. After turning, add full flaps and use power to adjust the flight path. Remember, you will need more power with flaps and the approach descent rate will be steeper. With a little practice, you will be rewarded with picture-perfect landings.

Since flaps provide more lift at slower airspeeds, you must be aware that when you retract them in-flight you will lose the lift and the plane could sink. For this reason, if you must do a go-around, make sure you increase power before retracting the flaps. Failure to do so could place your plane very close to stall speed before you can accelerate to a safe speed. This also applies to takeoffs with flaps. In most cases it is safer to take off with the flaps retracted or deflected no more than about 20 degrees. Larger deflections add more drag and can cause the plane to become airborne at too low of an airspeed.

Flying a scale model with operational flaps is a very rewarding experience. Not only do they look neat, but they also provide the same benefits as the full-size version. They take the anxiety out of landing your lead-sled WW II fighter or similar high-performance aircraft and provide a safer and more enjoyable RC experience.

### **FLAP ACTION**

Flaps impart a tremendous load on the wing and require attention during their installation. Make sure you use enough heavy-duty hinges on each flap and a heavy-duty control horn. There are many ways to actuate the flaps, including torque tubes and bell cranks. For large, fast or heavily-loaded models, the best way is to use a servo for each flap. These planes will also benefit from the flaps being locked in the down position preventing the airstream from blowing the flap back to the up position. This basically means that the servo arm is directly in line with the flap horn at full deflection and this takes the strain away from the servo. This is accomplished by turning on the radio and selecting full down flaps and choosing a servo horn position that is in line with the horn. Now, retract the flaps and make up the linkage from the servo to the horn. The amount of flap deflection is determined by the length of the servo arm; for more flap deflection, place the linkage farther out on the arm. The use of ball links may be required for smooth action and to eliminate binding.

The modeler has several options for the transmitter flap actuation method. The least desirable is to use a two-way switch, which only results in flaps up or full down. This is not very scale-like and could result in large pitch changes when the flaps are actuated. A three-position switch will allow the use of half-flaps for more scale-like flight. A knob or slider switch is another way to go and allows an infinite number of flap settings. The only drawback is that it is sometimes difficult to tell how much flap deflection is selected.

### **Do**

- Learn how your plane reacts to flaps at a safe altitude before attempting the first landing.
- Reduce the throttle to around 1/3 and let the plane slow before dropping the flaps.
- If used for takeoff, use only partial flaps.
- Adjust the power to maintain the approach path. Flaps add drag and require more power.
- Add power on a go-around and begin a climb out before retracting flaps.

### **Don't**

- Deploy flaps at high speed. The flaps may depart the wings or cause serious structural or servo damage.
- Use flaps on the first takeoff and test flight. You must first determine how much deflection is correct for your model.
- Use full flaps on takeoff. This adds a lot of drag.
- Let the plane balloon and lose its airspeed. Adjust the elevator to keep the proper approach path.
- Retract flaps when low and slow or you could settle onto the runway.



# RC Engines Break-in and Tuning

Gerry Yarrish  
Evolution, Featured News, Master Airscrew, O.S.  
4 Comments



To get the most out of any RC airplane, you have to break in your engine, and pick the correct propeller for the plane's intended use. For my fun fly Florio Flyer 60, I installed an O.S. 75AX for a little extra umphhh! To fine tune my propeller selection I used an accurate digital tachometer to get the engine numbers...

## Engine numbers:

- **Displacement:** 0.75 cu in (12.3 cc)
- **Bore:** 1.02 in (25.8 mm)
- **Stroke:** 0.93 in (23.5 mm)
- **Practical rpm:** 2,000-16,000
- **Output:** 2.4 hp @ 15,000 rpm
- **Weight:** 19.4 oz (550 g)
- **Glow Plug:** O.S. #8
- **Fuel Used:** Morgan Sidewinder Basher 20% Nitro / 16% Oil

For engine break ins I prefer to use a raised platform like a deck or a table to keep the engine and prop out of the dust and debris that can get kicked up during extended engine runs. For the first I used the Evolution 14x6 prop to break in the engine and I ran three tanks through the engine running the engine slobbery rich for two minutes (4-stroking!) and then leaned it out to max rpm for 2 minutes. I then richen it up and repeated the cycle for the whole tank. I then let the engine cool off for 20 minutes.



## Safety First!

I fired up the engine again and tweaked the needle again for max rpm and then backed off about a quarter turn. My Master Airscrew 14x6 prop earned about 9,200 rpm and idled a smooth and constant 2,900 rpm. The Evolution 14x6 was very close to the Master Airscrew with a 9,100 top end and a 3,000 rpm idle.



I also tried a few different glow plugs which, for the best idle and overall good throttle transition turned out to be the O.S. #8 plug. Next I switched to what I thought was my most promising propeller, the wood Xoar 14x4. Remember I am propping the engine for fun fly so I am looking for a good idle and transition and a powerful climb, not max rpm. Of course this will require a trip or two to the flying field to see what the ultimate winner is.



### Finding the Sweet spot

I next tried the Xoar 14x4. And it spun up to 10,800 and had a very low idle of 2,100. The low end needed to be tweaked a little as the engine started to load up a little. I leaned it out about 1/16 turn. The engine died with at an idle of about 1,700.

So with this fun fly prop looking good I dropped the diameter to see what a sport flying prop could do. I went to the Xoar 13x6 and was pleased to see the engine rev up to 11,350 without any adjustments. Tweaking the needle a little got a solid 11,550 rpm with excellent throttle transition from a 2,400 idle. I think this is the prop I will be using for the first test flight.



Fuel

consumption seems pretty good also, as it took only 3/4 of a 10 oz. tank to do all the prop tests. I used both the O.S. #8 and an Evolution glow plug but I could not see any obvious differences! My Glow Driver is the McDaniels Ni-Starter and I always have a backup one for the filed box.

### At the Field

I've been using Morgan Cool Power glow fuel for years and since I wanted to see what would happen with a little more nitro, I switched to the Sidewinder Basher 20% Nitro, 16% oil blend. This is the fuel the RC truck guys use so I thought why not. Engine start up at the flying field was instantaneous and only took a couple of hand flips. After rechecking the range and control directions, I took off into the wind. Throttle response is smooth and reliable and the airplane was dialed in for straight and level at about 1/2 power.



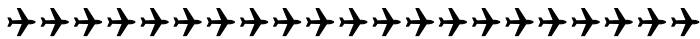
Advancing the power to full, I pulled into a vertical climb and the FF 60 just kept on going! Unlimited is the best description. At a high altitude, I throttled back to idle and entered a flat spin. The model rotated and wound up tightly at first and then flattened out. After about 10 rotations, I exited the vertical down line and advanced the throttle. The model instantly responded and the engine sounded great and I had no over-heating issues at all.



With several bursts of power, I did several snap rolls again without any hesitation. On landing, the engine remained steady during the entire approach. After a touch and go, I hit the throttle and again the model rocketed skyward like it had Jato packs helping. Several low level loops but me back at the approach end of the field and I landed without even a bump. Overall, the extra power of the O.S. 75AX and using



the Xoar 13x6 and the Xoar 14x4 make a big difference. Overall use the 13x6 but if you'll be doing a lot of climbing, then the 14x4 will impress all your friends when you win the Climb and Spin event. If you want some serious fun fly performance, this is the plane and engine combo to try. You'll love it.



Now for some Funnys.. 😊

**WHEN YOU GET TO THE FLYING  
FIELD AND REMEMBER YOUR  
TRANSMITTER IS STILL AT HOME  
ON THE WORKBENCH.**



by John Lawyer

\*\*\* Till next month may all your landings be  
wheels down. \*\*\*