



DCRC Club Meeting  
Friday 6/19/09 7:30 PM  
Montgomery County  
Council building  
100 Maryland Ave  
Rockville, MD

June 2009

Meeting Raffle:  
Nir Schweizer

**NEWSLETTER**

Volume 55, Issue 6

## Mid Atlantic Jet Rally NALF Fentress VA



Full Scale Super Hornets F-18 practicing Carrier Touch and go's



Beautiful BVM F-100 Photos by Andy Kane

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**[www.dc-rc.org](http://www.dc-rc.org)**

*Did you know that any airplane brought in to the model shop will receive 3 free raffle tickets. Bring in your models each month for your free tickets, and to share ideas.*

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**Cover:** *Fentress Jet Fly in with some full scale activity,*

*F-100 by Andy Finizio*

*Photos by Andy Kane*

# AirWays!

BY DAVID DRAZIN



At the March meeting, a new member, Kelly Regan from the PG/RC group, brought into the “model shop” a much safer starter for glow and gas airplanes. Basically, the pilot/starter does NOT have to get their fingers/hands into the arc of the prop. Starting is accomplished by holding the model behind the engine/prop area and then guides the spinner into the cone of the electric starter. Maybe this idea has been thought of before, but, it is so simple in its premise that it is hard to think of anything wrong with the concept. From a safety viewpoint, except for inboard starting systems, this one seems almost “foolproof”. You can see the starter and how to build it at ([www.mysite.verizon.net/vze11s34m/Planes/index\\_plane.html](http://www.mysite.verizon.net/vze11s34m/Planes/index_plane.html)). Click on *Smarter Starter*, at the top to view the video and instructions to build it.

During March we have had a few good weekends with decent flying weather, and some of the “early birds” were working out the winter “hangar rot” and cobwebs. This time of year the winds can be a little brisk, so that usually the giants are the only models able to handle the gusts. Much of the time everyone would sit around and “shoot-the-breeze” while waiting for the winds to either subside or stop coming from every point of the compass. The sport fliers with smaller planes would have to wait longer and sometimes they would not risk any flights because of the winds. It seems *always* more windy at the field than when you leave from home.

Toledo has come and gone. I took the opportunity to attend and

shared a ride with three others from DC/RC. Ron Bozzonetti, Tom Pfarr, and first timers, Jose Sanchez and myself made the 7½ hour drive. WOW! Talk about sensory overload! You will experience “so much in so little time”. It is total emersion of the hobby. Of course, we met with other DC/RC members, Andy Kane (JR), Doug Harper, Charlie Calvert and some others that were there but, we couldn’t hook up with. The word was that the crowds were thinner than last year, probably the economy, but it sure was packed and hard to get down the aisles. Surely, the press will cover the event, but it is hard to resist bringing home a bargain. The second floor has the “Swap Shop” and everything from small screws-n-nuts to models long out of production were on display for sale. Definitely, a show that should be attended at least once.

The DCRC Club is hosting its second annual Rudder Only Fun Fly at the club's field in Boyds/Germantown, MD on Sunday, July 19th. See flyer attached. Please visit the DCRC website ([www.dc-rc.org](http://www.dc-rc.org)) for directions and more details.

Please contact me at [degray@verizon.net](mailto:degray@verizon.net) if you have questions.

Thanks,  
Don Gray, CD



## April Club Meeting Minutes

BY DOUG HARPER



The meeting was called to order at 7:40PM by President Andy Kane. Andy asked for introduction of guests or new members. Joe Rice was in attendance with his son Andrew.

Tonight is Awards night and the program is by Walt Gallagher. Andy announced that AMA is conducting a membership drive.

**County Liaison:** Jim pointed out that the County is now ready to rebuild the bridge on White Ground and Shaffer Roads. This means the bridge will be closed for approximately a year.

**Webmaster:** Tom Pfarr announced that our website server was hacked. It is back to normal now.

**Field Maintenance:** We were rained out last weekend so we will reschedule the field cleanup day for April 25. Dave Fepelstein discussed the “blast deflectors” that have been installed at the taxi ramp to help the jet fliers.

**Sound and Safety:** Nir reminded everyone to be especially conscious of sound and safety tomorrow for Opening Day.

**Raffle:** Nir showed a screwdriver tool and portable drill for tonight’s raffle. Andy pulled the winning ticket which was held by Walt Gallagher. The second ticket was held by Dr. Dave McQueeney.

**Treasurer:** Scott announced that he had one expense over \$100. He also made available a copy of the treasurer’s report for anyone who wanted to see it.

**Flight Training:** Mike has his trainers ready to go for this year. He has procured two spread spectrum radios for use by flight training. The first day is April 25.

**Old/New Business:** A new hobby shop, called Hobby Flight, has opened in Derwood (off Shady Grove Road). All are welcome to visit it. There is a heli flyin in Hurlock, MD, on May 17.

Ed Leibolt announced that he will hold a short meeting at the break to discuss his need for help for this summer’s Camp.,

**Awards:** Charlie Calvert gave his annual presentation on the Al Montzka award, the premier award in DCRC. Charlie talked about what is was like in the “old days” when the club flew on Bonifant Road (where the trolley museum is). Radios used tubes so most of the day was spent tuning the single channel radio. If the batteries still worked after that, then you might get one flight. That was a good day.

Charlie talked about Walt Good (credited with invention of hobby RC) who helped people build their own radios. Walt made a list of parts needed that could be bought at Radio Shack. If the builder was good with electronics, he could build his own radio. Of course, there was plenty of help in the Club to get the darned things to work. One of these “experts” were always ready to help. This was a bit different than now.

Charlie then talked about some of the old radios that came on the market. They left a lot to be desired but were all we had. Eventually some pretty good radios came out. Charlie talked about the Heathkits that were quite popular. We even had a member, Dr. Mitchell, who was known to tune his radio while the plane was in the air. He even managed to land on the incinerator at Gude.

Everyone was on the same frequency so pin control was very important. Since it took so much time to get things working, it wasn’t a problem. Again, batteries were critical and were forever going dead.

It’s hard to imagine the radios we use today like the spread spectrums when we think about what was common not too many years ago.

Al Montzka was known for helping anyone who needed it. He was always getting the latest gadget to try. Many times, he would give one of these items to another modeler even before he tried it himself.

He was a large fellow, even though he was a dentist. He treated everyone the same and helped all. No matter what another modeler needed, Al was always ready to “loan” one of his or help the fellow fix his.

Al did this over many years and became the example for everyone of a great modeler. He never made anyone feel bad or lacking in any way. Eventually, DCRC decided to use Al as an example for all and created the Al Montzka award. This award is given when there is a member that exemplifies what Al stood for. This is determined by the previous recipients who get together to decide if such a candidate has risen to Al’s example for that year.

This year, there is such a person in DCRC. The 2009 Al Montzka award winner is Dave McQueeney. Dave was almost speechless upon receiving this award. Charlie also presented a permanent plaque to last year’s winner, Mike Peizer.

Mike Peizer proceeded to present an award to Ron Bozzonetti for all the help he has provided over many years in the flight training program. Mike gave Ron this year’s DCRC 2009 Award of Appreciation for all he has done for the club. Ron encouraged all members to help with the flight training program.

Mike than presented one of his flight training students, Mathew Wright, with an award for completing his flight training.

Walt Gallagher then presented Andy Kane for being our president for last year (and many others). Andy graciously accepted his award.

Andy then thanked Charlie for his great presentation this evening, as well as being the Al Montzka recipient in 1979. Andy pointed out that

*(Continued on page 5)*

# MODEL AIRPLANE PROPELLERS



BY W. B. GARNER

## Model Propellers - Part 2, Performance Properties

While a propeller is a physically simple device, its performance characteristics are complex. There are four performance parameters, namely, Thrust (T), Thrust Power (Pt), Torque (Q) and Shaft Power (Ps). Considered alone performance is a function of diameter (D), pitch (p), rpm, forward velocity (V) and airfoil shape and dimensions characterized by lift (Cl) and drag (Cd) coefficients. Propeller performance theory was developed in the first half of the 20th century, reaching its zenith during WWII.

The amount of thrust generated by a propeller is minimum at the hub and maximum near the tip. The reason for this variation is due to the way the effective wind velocity varies along the blade. Refer to Figure 2-1. On the right is an arrow labeled V parallel to the axis of rotation whose value (length) is proportional to the forward wind speed. Across the bottom is an arrow labeled  $2\pi r n$  (which will be labeled Vr in what follows), which is the wind speed caused by the rotation of the propeller. Note that its value is

proportional to the radius r. The two wind vectors combine to form the resultant vector VR (which will be labeled Vp in what follows) which is the source of the pressure on the blade at r providing the lift, dL and the drag, dD. The angle of attack on the airfoil,  $\alpha$ , is equal to the difference between the blade angle  $\beta$  and the angle  $\phi$  formed by the wind vectors V and Vr. While V is constant, Vr

varies with r so that Vp and  $\phi$  vary with r as well. Figures 2-2 illustrates how V and Vr vary along the propeller.

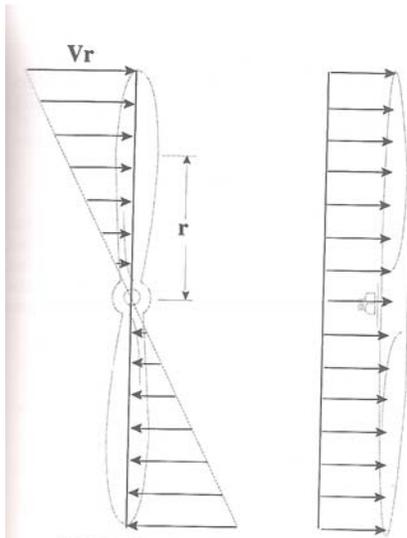


Figure 2-2 Rotational and Forward Wind Vectors Along the Propeller

Figure 2-3 illustrates the magnitude of resultant wind Vp along the propeller length. Therefore the pressure is least around the hub and greatest at the tips. Hence the thrust increases with increasing blade radius position.

Another property of propellers can be derived by examination of Figure 2-1.

The angle  $\alpha$  in the figure is the angle of attack, similar to that of a wing. As it decreases the lift (in this case the thrust) decreases, eventually becoming zero. Assume for the moment that the rpm remains constant so  $2\pi n$  (the horizontal wind component) remains constant. An increase in the forward velocity V decreases  $\alpha$  thereby decreasing the thrust. The thrust becomes zero when  $V =$

$\frac{np}{1056}$  mph where n is rpm and p is pitch in inches. Thus to achieve maximum speed increase rpm or pitch.

At low forward speeds the attack angle may become so large along part of the blade that stalling will occur. The larger the pitch, the more of the blade will become stalled. The blade will still produce thrust but at less than optimum efficiency.

In Figure 2-4 (on page 5) the angle of attack is illustrated for a pitch/diameter ratio of 0.5 with  $r/D$ , the radius along the blade divided by the diameter, as a parameter. The ratio  $V/nD$  is a measure of the horizontal wind angle. The blade will stall at an angle of attack of around 15 degrees (horizontal dashed line). For this case most of the blade is not stalled, even to small values of  $V/nD$ . As the value of  $V/nD$  increases beyond 0.5, the attack angle becomes negative, meaning that the propeller is being pushed rather than pulling.

(Continued on page 5)

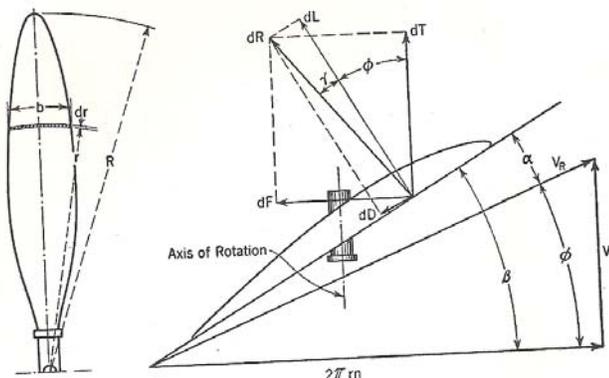
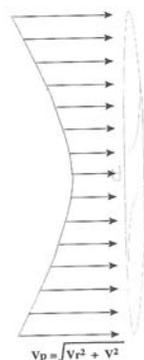
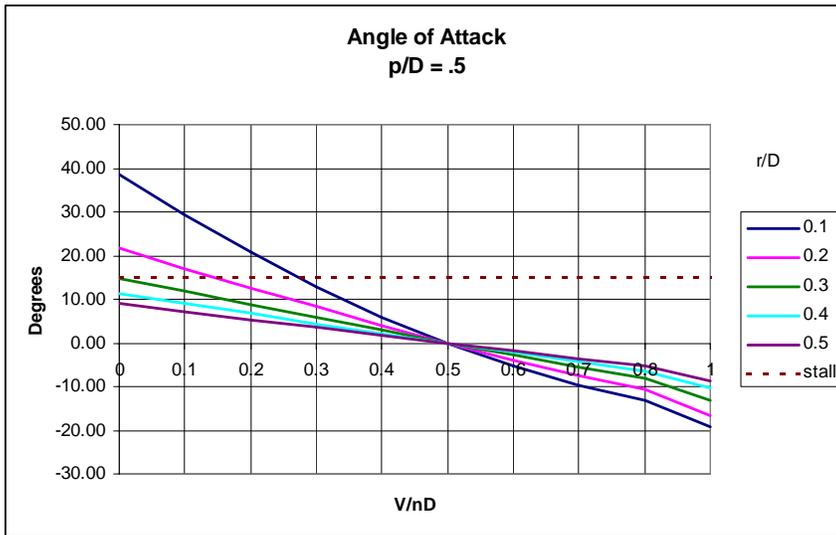


Figure 2-3. Composite Propeller Wind

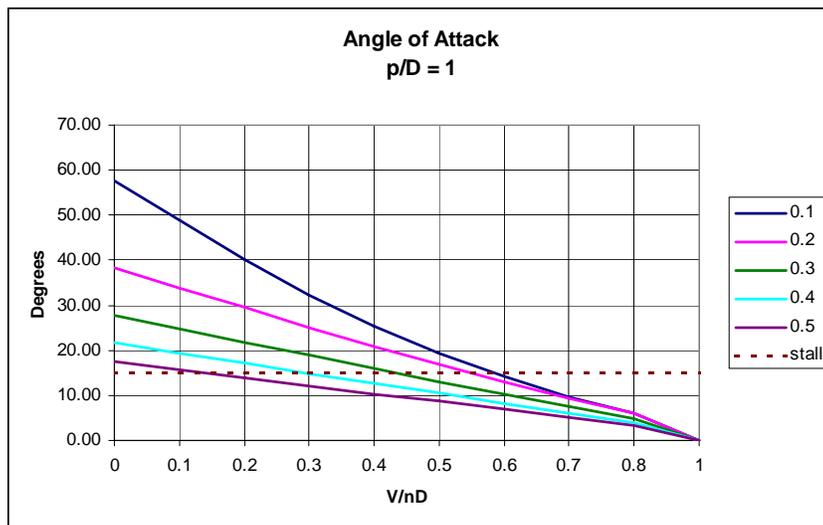


arrow labeled  $2\pi r n$  (which will be labeled Vr in what follows), which is the wind speed caused by the rotation of the propeller. Note that its value is

(Continued from page 4)



**Figure 2-4 Blade Angle of Attack, p/D = .5**



**Figure 2-5 Blade Angle of Attack, p/D = 1**

**Figure 2-5** illustrates what happens for a high-pitch propeller. In this case most of the blade is stalled at low  $V/nD$  that typically occurs at high rpm and low forward velocity such as take-off. A plane equipped with such a propeller is likely to be initially sluggish on takeoff but can fly faster than the lower pitch blade.

To be continued.

(Continued from page 3)

people like Charlie are why we have such a great hobby today. Charlie pointed out that the people are what make this hobby what it is.

**Model Shop:** Andy Kane presented an electric Ultimate ARF biplane which is made in Australia. Andy was impressed by the fit and finish of this kit so decided to build one. It comes ready to fly or you can get it without the motor and controller. It weights 3lb. It will hover for 10 minutes. Andy put a JR 6100 spread spectrum receiver in it.

Gus Crosetto presented a Foch Wolfe 44J which was based on a 1932 German prototype trainer. His father flew this airplane in 1948. He covered it in silver and it has Argentine markings. He built it from 3 views since there are no plans with a 56" wingspan. He installed a 400w motor and weighs almost 7 lbs. He covered it with microlite.

Viat Gaidamakov presented his heli called a Trex 6000 which flies on an electric motor using a 5000mah battery. It comes with all the parts needed to make it fly.

**Program:** Walt Gallaugher presented tonight's program on using a computer power supply as a lab supply. Walt started by discussing some A123 batteries he bought in Toledo a few years ago. They can be charged at much higher currents so his old power supply just wasn't up to the job.

He found that a PS out of a computer could be used to provide a very inexpensive, high current, well regulated supply. Walt found this information on the web by Googling an ATX power supply which is the designation for a computer supply. These supplies are known as "switching" power supplies (versus the older linear supplies). In essence, they use a much higher frequency, say 50 to 60 KHz, instead of the line frequency of 60 Hz. This allows the use of much smaller components, especially the transformer and filter capacitor, to build the power

(Continued from page 5)

supply. They dissipate less heat and use a feedback circuit to give very close tolerance to load swings. All in all, these supplies are very good and very inexpensive to make.

Since they are used in literally every desktop PC made, the volumes are huge which drives the cost ever lower. Walt began by snipping all the old connectors off the supply. He also talked about a handful of parts he used to connect his supply to his charger and to provide a load on the output. He also added an on/off switch and an LED to show that it was turned on.

The color code on the wires is as follows:

Red	+5V(25A)
Black	GND
White	-5V(.5V)
Yellow	+12V(10A)
Blue	-12V(.5A)
Orange	+3.3V(15A)
Purple	Standby
Gray	Power on
Green	Turn DC On

Since most hobby chargers use +12V, Walt used only the Yellow and Black Wires. He put RCA plugs on these wires to plug in his charger. He also put a 10 ohm resistor across the red 5 volt wire and ground to provide a continuous load. He connected the Green wire to ground thru an on/off switch to turn the supply on. Finally, he put the LED in series with a 330 ohm resistor from the Gray wire to Ground to show that power was on.

Walt went the extra mile by mounting all the components on the case to make a very finished looking unit. He warned all to watch out for shock hazard when you take the case off one of these supplies, even when unplugged. He also warned people to make sure the cut wires don't short to the case. He suggested using heat shrink tubing to isolate them.

Walt received a resounding round of applause for his interesting presentation. The meeting adjourned at 9:29PM.

## May Board Meeting Minutes

BY DOUG HARPER



The meeting, held at the field, was called to order by president Andy Kane at 7:55 PM. In attendance were Dave McQueeney, Andy Kane, Andy Finizio, Jim McDaniel, Joseph McDaniel, Tom Pfarr, Scott Davies, Alan Hoffman, Nir Schweizer, Mike Peizer and Doug Harper.

The minutes from the March meeting were read and approved.

Treasurer's Report: Scott reported that there were six checks written over \$100.

Flight Training: Mike reported that flight training is off to a good start. Andy asked Mike to see if we get any response from the five hundred flyers that were handed out at the recent Andrews Armed Forces air show.

Mike asked about the first aid kit and was informed that it has moved to the shed. Mike also recommended that we put information about nearby medical facilities in the impound. The Board agreed to do this.

Field Maintenance: Alan thanked all the members who helped with the recent cleanup day. The field and facilities are all in very good shape. We still plan to complete two more tables.

County Liaison: Jim has had ongoing discussions with the County on various facility improvements we might like to see such as a permanent rest room facility. We believe this is in the CIP for 2012. The County has made inquiries about paving the gravel road and parking lot leading into McMap which might be accomplished in the next few weeks.

Jim also asked the County about maintenance of the large shelter. The County has looked at it and decided to try pressure washing the wood to see if the wood can be cleaned.

The County has published a County Appreciation Day poster that includes a model aircraft. DCRC has made a donation again this year as well.

Events: Andy Finizio thanked Andy

Kane for cooking at Opening Day. Andy asked the Board's opinion on the value of advertizing County Appreciation Day given the high cost of doing so. The Board uniformly felt the cost far outweigh the value derived. In any event, the County is going to do advertizing for this event.

Sound and Safety: No report.

Webmaster: No report.

New Business: Andy Finizio indicated that there are people flying at McMap who are AMA members but not DCRC members. Based on our agreement with the County, these people can only fly when DCRC members are present at the field and must pass a pilot proficiency test. Andy will try to encourage these people to join the club before we take further measures.

Andy Kane presented a report on the ARC (Aviation Rules Committee which Andy is a member of) which is an AMA-commissioned group that is working with the FAA to address modeling activities. So far, if a modeler is a member of a community-based group, like AMA, then they will be able to continue operation of model aircraft under the rules of that group. This includes flying under 400 feet when closer than 3 miles to any airport.

Model aircraft outside these guidelines, like UAVs, will be controlled under the ARC. The FAA expects to rule on this in the next 12 to 18 months. We don't expect this activity to impact our type of model aircraft operation at this time.

The meeting was adjourned at 8:50PM.

## May Club Meeting Minutes

BY MIKE PEIZER



Dave McQueeney called the meeting to order at 7:40PM.

Guests: Leo Eskin is visiting from the Bay Area.

Dave brought a gong to the meeting and told a story. There is a club that has a gong at their field and when someone does something ill advised they get gonged. The guy who gets gonged then has to man the gong until the next person does something ill advised. Dave was rather taken with the idea and found a gong to bring to the field. We'll see how it goes.

In May the FAA released recommendations of an Aviation Rulemaking Committee on small, unmanned aerial systems, which could influence the radio control community. More unmanned aerial vehicles are being flown all the time and the FAA is concerned about this. The AMA is concerned about this because of how it could effect model airplane operations and they will be there to represent the interests of the modeling community. If you are a member of the AMA and follow their guidelines you are OK. A letter will appear in the next issue of Model Aircraft declaring the AMA position. It's not over yet, but it's looking good. For those who would like more information about the issue go to the AMA Website. <http://www.modelaircraft.org/news/ama-faa.aspx>

**Awards & Field Improvement:** Allan Hoffman reported that the work detail scheduled for April 11th was rained out. On Opening Day a work crew cleaned up the shed and Don Gray spearheaded the painting effort of the transmitter impound. Thanks to Jim Bonbright, Ira Glikman, Tom Pfarr, and the other members who helped get the field in shape for this flying season.

**Events:** Andy Finizio reported Opening Day was a success and Andy Kane did a great job with the food. Thanks to everyone who helped clean up the shed. The jet exhaust deflectors are in place and functioning well. Don't forget County Appreciation day is the 27<sup>th</sup> of June. Plan on coming and bring an airplane.

**Treasurer:** Dave McQueeney gave Scott Davies' report since he was unable to attend the meeting. There were six expenditures over \$100.00 last month.

**New Business:** Les Hamilton reported that Maynard Hill is continuing an effort for a new world record. Maynard will not rely on any automated system for his latest record attempt. The FAI has decided that UAV's are no

longer under their jurisdiction. Subsequently two of his world records have been retired. Maynard is looking for pilots and monitors to help out with the attempt to fly a closed course for 48 hours straight. Call Les Hamilton if you are interested in helping out.

Dave McQueeney showed some pictures he took at Top Gun this year. First place, Team was awarded to the Graeme Mears/ David Shulman F-16C. It garnered an unprecedented 100 static points!

**Model Shop:**

Roy Day showed a Porterfield electric powered scratch built scale model. It's powered by a 150 watt out runner motor and a 1100mAh LiPo battery from Radical R/C. The model averages 8 or 10 minutes of flight on a charge.

Dave Littleton showed a Tiger Moth. Dave bought it at a table sale this spring for a song. He had an OS .35 engine for it at home and he mounted it, inverted, in the aircraft. He bent the crankshaft while trying to start it. This prompted him to convert it to electric. Now, his \$30.00 bargain with a new electric motor, ESC and battery cost him more like \$200.00. Is this a great hobby or what?!

Walt Gallagher showed an E-Flite Radian glider from Horizon Hobby. It took no time at all to build. With the supplied motor and the recommended 11.1 v, 1300 mAh LiPo battery it will almost go vertical at full throttle. It's a lot of fun to fly.

**Raffle:** The raffle prize, a new compressor /12 volt power source was won by Ira Glikman.

**Program:** The P-51 mustang has fascinated Mike Kroese since he was a kid. His parents grew up in Holland during the Second World War and they would sit at the end of the runway and watch the Spitfires and P-51s fly overhead, so he comes by his fascination naturally. Mike got to attend the 2008 Gathering of Mustangs and Legends at Rickenbacher Field in Ohio. To bring together 100 P-51 Mustangs was the goal. Mike showed a short video of the event. The flight line at the field was lined with row upon row of P-51's and at times they were allowed to actually walk up and touch the aircraft. It was amazing to see so many Mustangs on the flight line and in the air. The air show was the best he had ever seen. The super charged Rolls-Royce Merlin engine made the Mustang a fantastic performer. The roar of the Merlin is something you never forget. If you see a cyclist on Schaeffer Road wearing a jersey that says P-51 Mustang on it, it's Mike.

The meeting was adjourned at 9:15PM.

## Calendar of Events 2009

**June**

- 6-7 "Two Tonys" Lums Pond DE IMAC
- 6 DCRC Training Session, Walt Good RC Field, Germantown, MD
- 13-14 Harold Weil Memorial Giant Scale Fly In Quakertown PA
- 13-15 North Carolina 572 Statesville Model Flyers 10th Annual Giant Scale Fly In June 13 & 15, 2009 [www.geocities.com/statesvilleflyers](http://www.geocities.com/statesvilleflyers)
- 13 Kirk Memorial RC Scale fly in Parkton, MD RC Modelers of Baltimore [www.rcmb.org](http://www.rcmb.org)
- 18-21 2009 IMAA Rally of Giants Hamburg PA Farview Field
- 19 DCRC Club Meeting Rockville, MD
- 20 DCRC Training Session, Walt Good RC Field, Germantown, MD
- 26-27 24th Annual Ray Gordon Memorial Jumbo Fly-in, Harrisburg, VA
- 27 Montgomery County Heritage days and air show. Germantown, MD

**July**

- 9-12 Warbirds Over Delaware 2009
- 11 DCRC Training Session, Walt Good RC Field, Germantown, MD
- 17 DCRC Club Meeting Rockville, MD Program/Ira Glikman
- 19 DCRC Rudder Only Fun Fly Germantown, MD Walt Good RC field
- 24-26 Warbirds Over Pennsylvania Quakertown, PA
- 22 DCRC Board Meeting/Mike Dooley
- 25 DCRC Training Session, Walt Good RC Field, Germantown, MD
- 25 Loudoun County Aeromodelers Assoc 10th Annual Electric Fly In Leesburg, VA
- 25-26 Pegasus RC IMAC Challenge Hagerstown, MD
- 31-2 Liberty Bell Jet Fly IN Donegal Springs, PA

**August**

**District of Columbia  
Radio Control Club**

First Class Mail

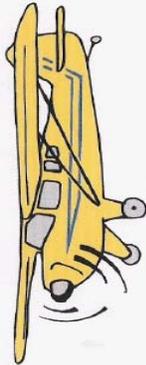
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One of the oldest and largest RC  
clubs in the US.  
And now an AMA Gold Leader Club

[www.dc-rc.org](http://www.dc-rc.org)

June 2009

**2<sup>nd</sup> ANNUAL RUDDER  
ONLY FUN FLY**



**SUNDAY, JULY 19th,  
2009**

**AT DC/RC FIELD, BOYDS, MD**



FOR DETAILS CONTACT DON GRAY - [DEGRAY@VERIZON.NET](mailto:DEGRAY@VERIZON.NET)