



## *UPCOMING EVENTS*

- May 7<sup>th</sup> – Club Meeting (Legend's Steakhouse)

### *April Meeting Minutes*

President Jim Powers called the April Meeting to order with 15 members and 4 Board Members present. Vice President, Jeremy Woodside read the Minutes from the April Meeting. A motion was made and seconded to accept the Minutes as read. Treasurer Dan Wandell presented the Treasurer's report. Motion was made and seconded to accept the Treasurer's Report. In old business, Dan outlined the financial report of the Swap Meet and Matt McKnight thanked everyone for their participation in making the Swap Meet the most profitable yet. In other old business, Jim outlined the logistics of the upcoming Fellowship Fly In. In new business, a motion was made and seconded to purchase ten chairs at \$25 per chair, motion passed. Dan Wandell reminded the membership that dues are due by the 15<sup>th</sup> of April for renewal. A motion was made and seconded to rent a storage unit, motion passed. Matt McKnight reported that he purchased a half page ad with the AMA for the Mid American Fun Scale Classic. A motion was made and seconded to convene the next three monthly meetings at Legend's Steakhouse, motion passed. Motion was made and seconded to adjourn.

### *President's Comments*

Nothing could be sweeter than a clam sunny morning the temperature in the mid 70's and your in your vehicle heading to buy bushes and mulch so you can finish the yard work. My wife was looking over my shoulder now back to what I was saying, your in your vehicle heading for the flying field. It's that time of the year again and although we would all like to be heading for the field there are other things that must be done first. Some of the most enjoyable times I've spent with my family have been working in the yard sweat running down my face and swearing next year I'll pay someone to do this job. But when the work is done and the yard is looking great it makes the time at the field so much better and less stressful.

The associations Fellowship Fly In is over and it when great. We had 49 registered pilots a ton of planes and good weather with the temperatures in the mid 80's. We got plenty of flying in early but the wind picked up around 2pm and it got a little breezy, with the wind down the runway from the south there were still pilots flying and I would like to report that there weren't any major crashes. Myron did a great job cooking with help from Ralph Foll and Jerry Miller, as always the food was great. Our club did a very good job, the field looked great, and participation was excellent, I would like to thank everyone that helped and showed up to support our club, special thanks to Rick Keisler and Ken Caissie for the work they did cutting the grass, awesome. So let's take a well deserved break and be ready to have our best ever Mid American Fun Scale Classic this September.

I'm going to keep it short this month I ask Steve Petty to write an article about what he has been doing with the kids at the school he teaches at and I think you will enjoy it very much. I'll see you at Legends Steak House in Smyrna May 7th (the first Thursday of the month) the meeting will start at 7pm, come early if you want to eat the reservation is for 6pm.



## *The Flyer's Corner*

### **R/C Airplane Construction Begins at S.C.H.S.**

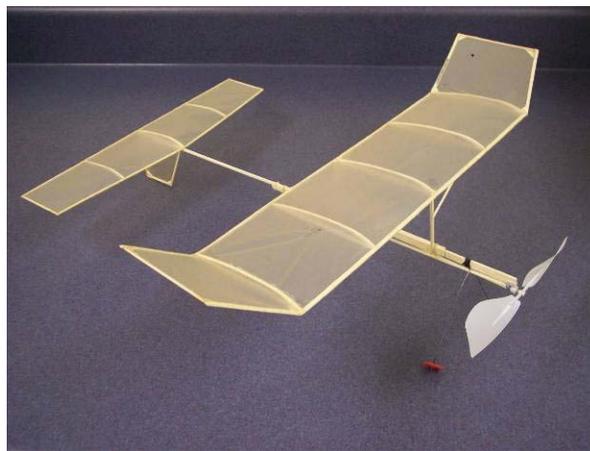
**by Steve Petty**

When I first met Jim Powers, I had never heard of MPRC Fliers and knew little about the AMA. We were considering doing a unit with a group of high school students on Aerospace Technology that would include the construction of an R/C airplane. Given my limited experience with R/C, I had reservations about undertaking such a project. After a visit to PAC R/C and a short conversation with Mike Dunphy and Jim, I felt confident that I would have the help and support needed to complete such a project. With the help of club members I have learned a lot in the past few months and with direction from PAC in getting the right supplies and materials for the project, we have completed the aerospace unit and are well into the construction of our R/C airplane. I have been keeping Jim informed of our progress and he recently asked me to share our experiences with the club through this newsletter article. Let me first introduce myself. I am a newer member of MPRC & AMA having just joined in December of 2008. My interest in model aviation however goes back to my childhood. As a young teen in the early 60's, I was always happy to accompany my older cousin Don to the r/c field in Percy Warner Park in Nashville. He had several models that he built and flew. Another of my cousins, Mike, scratch built control line airplanes. Yet another cousin, Gordon, was interested in rubber band free flight. Together we built a Spirit of St. Louis balsa and tissue kit when I was 12. Past this as far as I got in model aviation was to fly and crash several of the old COX .049 plastic control line models. This interest in model aircraft is now renewed through a project that we have started with my high school students. It is this project that Jim has asked me to write about.

I have been teaching Drafting & Technology Education in Tennessee public high schools for 28 years. Over the years classroom instruction has regularly aerospace engineering. The unit has always as the history of aviation, propulsion systems, layout, airplane control surfaces, axes of airplane, and etc. We have been building rubber powered airplane projects as the hands- (Pic-1)

This year I got a request from Principal Shelbyville Central High School Vocational "Would you like to expand the Aerospace unit construction of an R/C airplane?" he asked. his reasoning for the project. His priority was math, science, engineering, and technology project that would promote interest in our technology program. I'm thinking, "Oh no he's been reading those journals on education again." He went on to say that he would be willing to fund the project if it were not an ARF but a kit airplane that the students would build themselves. It would have to be flown by us and then placed on display in the school lobby. "Wait a minute, you actually want me to fly the thing? I don't know how to fly those things," was my reaction. "You'll learn," was his response. So the school purchased the airplane kit, radio equipment, tools, supplies, and most importantly, a flight simulator and set us to the task.

I started off the aeronautics unit the same as always. We flew our paper airplanes and added control surfaces to them. We made an airport layout that covered almost the entire classroom floor and by adding ailerons, rudders, flaps, and elevators to balsa gliders we directed them at specified runways.



included a unit on included topics such airport facilities rotation, parts of the paper airplanes and on part of the unit.

Phillip Farrar of Annex where I teach. to include the He went on to explain the integration of with a hands-on

Here's where we began to expand the unit of instruction. By using a free download of Flight Simulator G4 each student was able to identify control surfaces and graphically see how they affected the airplane axes. Of course students were required to fill out study guides while using the simulator to keep them on track and learning but I must admit that some stunt flying and crashing for fun. Making use of our miniature wind tunnel of measuring lift and drag, the students airfoil shapes. (Pic-2)

The math and science component students graphed lift as a result of changes for a flat wing, a cambered flat bottom symmetrical wing. (Pic-3)

A discussion of Bernoulli's new meaning as the students studied the easy to see on the graphs which wing shape



came into play as in angles of attack wing, and a

principle took on graph results. It was produced the most lift and where each wing reached its stall point. Small

airplanes with rudders, aileron and elevators were made by students and then placed into the wind tunnel as well. We were able to witness pitch, yaw, and roll inside the wind tunnel by adjusting the control surfaces.

Student construction of the R/C airplane has been approached with caution since none of us had ever built this type of project, and we knew the goal was to build a flyable R/C airplane. We began with the construction of 5 different Gillow's WWII rubber band free flight model kits

with 16" wing spans. (Pic-4) Students were grouped in teams of three which worked nicely with each student in the group beginning construction on a different part of the airplane. Construction proceeded quickly with the most time consuming process being covering with tissue. (Pic-5)

We did finish, fly, and crash all 5 war birds. After flying, the Gillow kits were patched back together, painted, and decaled and now make a nice classroom display. (Pic-6)

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The PT Electric kit by Great Planes was chosen as our first R/C construction project. (Pic-7) It is a 56" wing span trainer with an old style brushed motor. The kit uses a switch and a servo to turn the motor on or off. No ESC. The kit has elevator and rudder only. Some consideration was given to adding ailerons but this being our first kit we will be sticking with 3 channels. The only modification to the plan will be to use a brushed ESC on the stock motor and a larger battery.

As of today we are coming along well with the construction of our RC plane. (Pic-8) It turns out to be somewhat of a design/problem solving process as the kit pieces don't always fit exactly and when you change anything like battery size, for instance, other parts of the plane change as well. Students have had to identify parts, organize, and plan their work. Students are scheduled 2 per day to work on the model so they have to communicate their progress with one another as part of a whole class construction team. Students have also been scheduled 2 per day to fly the full version of Flight simulator 4.5 and a simulator tournament is planned to determine which student gets first shot at the sticks of our PT Electric. The "big plane" as they have come to call it is an ongoing and motivating project. Naturally, we have had to move on to other instructional topics, and I often hear, "When are we going to get to work on the model again?" I still schedule as much construction time as possible and I have no doubt that the students will finish the model. The question now is – can I become a proficient R/C pilot in time to fly the finished PT Electric?

