

THE FLYER



Middlesex County
R-C Fliers, Inc.

July 2011



Team 2.

Sorry, did you really expect me to put the Winning Team on the cover? This is Team 2: Jim Orsborn, Jimmy Hill and Adam Harte. I hear that we finished in 2nd place. See the Construction Derby write-up for more details. *Jim*

President's Message, by Jerry Crowley

Greetings to all our Club members. It's July already and the heat is here to stay. We are enjoying some very fine flying weather and I trust that most of us are taking advantage of this fine weather.

A few things are the topic for July such as the Construction Derby, and Family Day outing.

The construction

Derby has already taken place as of June 26th. It turned out to be a great day with four teams participating. They all created great designs and all flew rather well. I unfortunately was unable to stay for the whole event but understood that all had a great time. A separate article will detail the entries and winners of the event.

I would however like to thank those who helped in setting up the event and making it such a great success. Ray Capabianco and Jim Orsborn put together another great event this year. Special thanks to Don and Angie Fitzreiter for shopping and cooking during the event. Also those that assisted in the judging and setup of the

event. It is a lot of work and it is most appreciated.

Thanks again to Dave Varrell for loaning us the shelters (sun) for the day. They were easy to set up and easy to take down.

Thanks go out to Paul Sullivan for painting the model stands and filing in the hole at the entrance to the field.

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MCRCF Construction Derby by *Jim Orsborn*

Background

Paul Harvey used to have a closing line that went, "So now you know the Whole Story." With that line in mind, here are some notes about the story behind a successful MCRCF Construction Derby.

Soon after he sets the date, Ray starts assembling all of the parts that are needed to run our Construction Derby. Rule changes, lessons learned, new designs, glue supplies, ... all have to be reviewed and worked into the plans.

Ray's son helps him update all of the paperwork that includes the information flyer, rules and the event day judge's sheets and instructions.

Ray seems to know most of the hobby stores in the area as well as several on the Internet. Suppliers for the

balsa, hardwood, glue, hardware and foam board are everywhere, and it generally takes Ray several weeks to collect all of the material — making sure that he gets everything at the lowest possible price.

Hell week for some used to be final exam week, but for the construction derby, it is the week before the event. This year we needed to assemble six kits, each containing the exact same items.

I agreed to help Ray, but had to go out of town on business. So we got together on Saturday. The photos on page 7 say it all in terms of scope.

When I arrived, we still had several kit items that needed to be trimmed to size on a small table saw. There were also several last minute changes to the

printed instructions, so Ray's computer and a printer were added to the assembly area.

Ray's intent each year is to include material that may be used to build several different designs. This year, planes were made using the mailing tube, dowels and the ruler as a fuselage. Several different wing designs were also used.

Common issues are seen in all of the planes; in that they need to be balanced (being able to slide the wing is probably the best solution); servo rods probably need to be stiffened; control surfaces need to flex freely but should not be too large or use max deflection.

Team building and communications are also very important. Having fun with good friends and good food made it a perfect day.
Jim

Pres Message (Cont.)

Family Day is around the corner, please reserve this date: Sunday July 17th (Rain Date: July 24th). We need volunteers to help put together a day of fun for all and maybe have some competition flying. We need help with Trainers with "BUDDY" boxes so the kids can have an opportunity to fly as well as any adult that wish to try flying. We plan on having plenty of food for all. Guests are welcome to join in the fun.

For those of you who have Slow-Stick models please bring them with you. Some friendly combat may be in the making.

In closing I hope to see you at the Family Day event. I missed out on the sausage at the Construction Derby but I plan on making up for it on Family Day. Good safe flying.

Thanks,
Jerry Crowley,
President MCRCF



My Story by Bob Forgione

The Basic Concept:

Having never been involved in the Construction Derby put on yearly by MCRCF I found myself at a decided disadvantage.

The following design is unverified and anyone using it does so at their own risk.

Hopefully, I will provide a follow-up article articulating the success or failure of the design and we will all learn something from it.

I assumed that the material provided would make this a viable design. However, I had no idea what the material was at the time of this writing. So here goes. Refer to the figures below showing the three views and the assembly with the critical components.

Using the 36 inch laminated booms from 1/4 spruce seems to work as the building block for this airplane. Allowing the width to be selected between the two beams to accommodate the servos appeared to be the best option and to provide provisions for a shear plate for the OS .32 engine borrowed from Jeff Ward (Thanks Jeff). Also the 2 inch battery pack and the receiver can be mounted between or above the booms with foam or scrap balsa.

The wing span is 48 inches or 36 depending on the material supplied with a 9 inch cord which results in the minimum 14 inch requirement between the aileron tip and the leading edge of the horizontal stab. I allowed extra area for the rudder controls based on conversations with people who had done this before. All the aerodynamic parts will be glued to the beam and hopefully will have enough support to allow the

structure to stay intact for the 10 second flight requirements. I can assume the airplane will weigh about 3 pounds as the motor and servo components will take a large percentage of the weight. I used the Escapade to create the proportions of the wing area and the control surfaces and scaled it down to fit the design. I think this will be a pretty hot airplane flying and hope someone on the team will fly it when it gets to the point of launch. No gear will be provided. Oh well, no Touch and Go's. Mostly Go's.

Follow up article.

THE DAY OF THE EVENT.

Here are some details for our team consisting of Neil Cumbie, Peter Lu, and myself. Captains were chosen based on flying ability so Neil was the team captain. As it turned out, that was a good choice as he dazzled the spectators with some magnificent flying as you shall hear about later in this article.

There were no plans allowed for this contest and we were given some basic materials with which to build. A 6 ft x 3ft piece of foam board .25 inches thick, leading edge stock, control links and rods of various lengths, along with hardwood for the motor mounts and some miscellaneous balsa pieces. Control horns and tape were provided to hinge the control surfaces. We were allowed 15 minutes to sketch the construction before the 90 minutes began.

Cont. From Pg. 3

The kit used to support this conundrum was supplied by the captains (me in this case even though I was not the captain). It consisted of 4 servos with standard leads which proved to be our demise for build time as lead extensions were not allowed. Not clear in the rules as they were part of the radio system although the judges disagree. A transmitter, receiver, and specific tools as per the attached list. The time for this construction was set to 90 minutes which none of the teams made as we were soon to realize.

If you would reference the previous diagram from the last article, the 2 major differences were the use of the mailing tube for the fuselage and the location of the servos. We were the only team that realized that the mailing tube would be ideal for length and stiffness. It also provided a very symmetric center line for the thrust line of the motor and the wing and tail feathers. The motor was mounted on two hardwood beams and glued to the inside of the tube at the center of the mailing tube. All the relative dimensions were pretty much the same as the referenced diagram.

We designed the servos to be at the rear as in the conceptual diagram but because of the lead lengths we had to move them to the front so they could reach the receiver. The control rods had to be redone as they were too short for the new length of the rods. We used balsa squares and drilled transverse holes and taped the threaded and z bend lengths to the balsa sticks.

As you may ascertain, this caused a further increase in building time. Also during the construction, the team decided to go with a much larger (60+ inches) wing with no airfoil. Just a flat sheet of foam board cut to specs. The leading edge was used as platform for the wing and glued to the tube. Elastic bands with dowels (A-la Early LT40) were used to hold the wing in place. The tail feathers were constructed of foam board and carefully hinged with the tape provided and the horizontal stab was notched into the mailing tube as you might see in the hand gliders that kids fly. The distance from the aileron ends to the horizontal stab front turned out to be 17 inches, well over the 14 inch requirement. The proportions were similar to the conceptual diagram from the last article. (not the wing). This dimension would be later changed to the 48 inches after construction was completed which resulted in another penalty. This proved to be a wise choice because the lack of stiffness on the wing tips would have caused undo deflection during flight. Also it allowed us to add the touch and go hanger which also turned out to be a wise decision for the flight.

Finally the servos were glued into place in the new location. The battery pack was located under the right wing and the receiver was held down with crossed elastic bands on top of the wing. The fuel tank was assembled to the side of the tube using leading edge stock to allow a flat surface for the fuel tank. Then it was held with elastic bands against this new surface.

Cont. Next Page.



THE FLIGHT.

The engine was started and the plane was hand launched into the wind. The maneuvers were all completed as specified including the ONLY completed touch and go and the ONLY spot landing in the center of the circle.

The only problem was the down trim was not enough and the Neil had to hold down elevator during all the maneuvers. Also there was some fluttering after the stall turn of the ailerons when it leveled off.

IF WE HAD TO DO IT OVER AGAIN.

The only major changes would be to stiffen up the control linkages to the ailerons. Also add down thrust to the motor to counter the downward upward tendency of the airplane.

RULES.

For the rules, the flying should be scored heavier on points. Maybe there should be a special award for completing the maneuvers. People should be allowed to use there own tools and radios. The idea of having other people use the other team's radios only increases the construction time because of their non-familiarity of the equipment. Lead lengths of servos should be allowed to vary because of CG and control rod wind up problems.

Bob Forgione

July 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

July 13th — Monthly Meeting

July 17th — Family Day at the Field

24th is the rain date.

August 2011

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Aug 7th — Competition Fun Fly

Aug 10th — Monthly Meeting

Aug 28th — Fun Fly-In at the Field





Event photos by:
Gerald Carignan

Ray and Mary's Dining Room / Living Room
(AKA Kit Assembly Area)

Six Construction Derby Kits
ready for transport to the field



Official Publication of the Middlesex County R-C Fliers, Inc.

The FLYER is the official publication of the Middlesex County R-C Fliers, Inc., a non-profit organization chartered for the promotion of radio controlled model aircraft building and flying. The club operates a flying field located on Treble Cove Road, Billerica, MA. The club offers free flight instruction to any member provided they have a current membership with the Academy of Model Aeronautics. Contact any club member for details. Meetings are held on the second Wednesday of every month between September and June in the Billerica Recreation Dept building at 248 Boston Road in Billerica, starting at 7:30 PM.

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