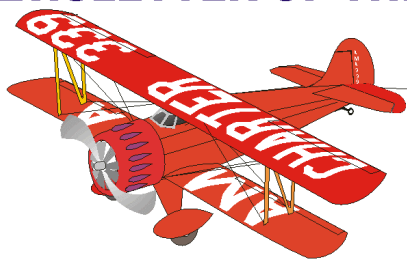


NEWSLETTER OF THE CHARLES RIVER RADIO CONTROLLERS, INC



CRRRC FLIGHT-LOG

<http://www.charlesriverrrc.org/>

AMA CHARTER 339

AUGUST 2006

VOLUME 43 NUMBER 8

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GENERAL MEETING

Wednesday
August 23rd
at 6: 00 PM

FLYING AT DAVIS FIELD SUDBURY

Back by popular demand, this is our third and final flying meeting of the summer! Bring your flying projects and put them in the air.

Many flyers will be there before 5:00. Meeting ends 8:00, so be there early and get some flight time. As always, guests are welcome!

Directions to Davis Field are on the back page. In case of rain, meeting is cancelled.

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PLANES YOU MAY SEE

YARD SALE!

Last month we had a yard sale at the monthly meeting. It worked out great, so we're repeating it this month. Bring your items for sale and display them on the field.



FUNKY CHICKEN



SCEPTER RES GLIDER



HEART PUMPING 3D

President's Letter

As with any proud dad, I have exciting news to share with any captive audience I can find. As many of you know, my 19-year-old daughter Jaki started flight



lessons in February. With all of her requirements met, she made an appointment for her flight test for Monday August 7th. As luck would have it, test day came around with severe thunderstorm warnings and 18-knot winds gusting to 20-25 knots. I started to relax because I assumed that the check ride would be cancelled so I was surprised when she called to say that she not only had flown, but was now a certified pilot. My birthday is in August and my present from Jaki is lunch on Martha's Vineyard, guess how we are getting there.

For the rest of this column I would like to talk about my experience at the RES contest from the point of view of someone who mostly flies gas airplanes. Several years ago, I won a glider in the club raffle. The model is a Riser and it was donated by Tom Bauer who did a beautiful job building and covering it. With the RES contest coming up I decided it was time to clean the dust off and go flying.

The July meeting at Davis provided an opportunity to balance and trim out the Riser. With the help of Chris Schuch we dialed in some up elevator as a pre-set for launch mode and we assigned it to one of the switches on the transmitter. I made a few flights and went home satisfied that that I was ready for Saturdays contest.

I left the house with a very uneasy feeling of having forgotten something. The car looked empty. I had a glider and a transmitter. I went through the check list in my mind; 20 lb field box, starter, clean up materials, plane restraint, fuel, extra props, no need for any of it. Getting out of the house with a glider was a lot simpler.

I got to the contest bright and early but decided to forgo any practice launches having been told that it was bad luck. As I waited for my name to be called, I watched the experts and came up with a flight plan in my mind. When my turn came, the launch was

uneventful but as soon as I released, I immediately began a series of up and down oscillations. I kept trying to hold level flight with down elevator but before I knew it, I was running out of space over the trees at the far end of the bowl. I held as much down as I dared and landed out of sight but in bounds. During my long walk back from the bowl, the elevator caught my eye and I realized that the problem was not with the stupid plane but with the stupid pilot. I had forgotten to flip the switch back from launch mode and was trying to fly with a considerable amount of up elevator.

My second round, although much smoother lasted about 2 minutes and it seemed like most people were not doing any better. It was about this point where I started to wonder; why do these guys fly gliders? You have very short flights, you can't just go where you want, far from having fun doing crazy maneuvers you spend your time trying to fly perfectly smoothly and all your time is spent looking for nonexistent thermals.

It was while I was contemplating turning the Riser into a lamp that my name was called for the next launch. This time when I came off the line, I went right and I could actually see the Riser getting bumped by rising air and it slowly gained altitude. There was much satisfaction in realizing that those launching after me were following coming into my area because I had found the good air.

I didn't quite make the 6-minute task but I came close and I even hit the tape. Naturally this changed everything. Now I understood what keeps everyone coming back. The rest of the day did not go as well, but that one flight was enough to get me thinking, I got to do this again.

-JP

**START YOUR 2006
MEMBERSHIP
TODAY!**



Sign up and join the club. Use PayPal or check when starting or renewing your membership.

Treasurers Report

TREASURER'S REPORT

Report Date 08/01/06

Starting Balance 07/01/06	
Checking	\$2,444.96
Savings	\$2,904.60
Cash Box	\$25.00
PayPal Acct	\$39.21
CD Accounts	\$4,667.71
Total Starting	\$10,081.48
Income	
HLG contest receipts	\$639.00
2006 Dues income	\$101.00
Scale Master advance repayment	\$600.00
Transfer from PayPal account	\$0.00
Interest - Savings	\$1.38
Interest - CDs	\$12.15
Total Income	\$1,353.53
Expenses	
HLG contest expenses	\$377.08
Web server fee, check #1497	\$99.00
Medfield planter materials, check #1498	\$62.27
Stamps and postage, check #1499	\$82.78
Checking account fee	\$12.00
Total Expenses	\$633.13
Transfer - Savings to Checking	\$300.00
Ending Balances	
Checking	\$3,451.83
Savings	\$2,605.98
Cash Box	\$25.00
PayPal Acct	\$77.75
CD Accounts	\$4,679.86
Grand Total Ending 07/31/06	\$10,840.42

*-Jon Leehey
CRRC Treasurer*

UPCOMING EVENTS

Saturday and Sunday, August 12 and 13, 2006 – The ESL crew from CRRC was busy with over the weekend with preparations to try to pull off a MoM competition next week. We were perfecting a 4-winch retrieval system that does not require a retrieval line during the launch stage. The system was ready for prime time by Sunday afternoon. It worked flawlessly.

Annual CRRC/ESL Open Class Soar-In. Takes place at Davis field. CD's: John Nilsson and Anker Berg-Sonne. World-class fliers from around the East coast will be here to compete. For more information look us up at www.flyesl.com

**Wednesday
August 23rd, 2006**

– Club meeting and yard Sale at Davis Field! Bring your surplus quipment, and planes. We will have a yard sale and swap at the field. This will be an informal seller-to-buyer event. Simply bring a blanket and set out your stuff.



Wednesday, September 20, 2006 – Club meetings return to Verizon labs in Waltham. If you've been hankering for a raffle, make sure you come to this meeting. Andrew brought a load of future raffle prizes to the BOD meeting, and they look great! Andrew said the club tool the summer off for flying; he didn't take the summer off from buying.

Saturday September 30, 2006 – Electric Fun Fly at Bill Martin Field in Medfield. Tom Bauer will be the CD. Lets hope for calm weather this year. The event will include lunch or snacks.

Veterans Day, November 2006 – CRRC annual club auction. The date is not finalized and will be announced soon. Last years auction worked out great and will be held at the Natick VFW hall.

-David Spielman



JULY GENERAL MEETING NOTES



Secretary's Report: July 19, 2006 General Meeting

This will be a short Secretary's report. The reason is that we met that evening at Davis field. While it was a bit windy earlier in the evening, members showed up to fly and to sell excess aero modeling planes and parts. The wind setteled down and the evening of flying was as good as it gets. After the swap meet and flying the meeting was called to order at dusk at approximately 8:15 PM by president John-Pierre Riu.

The Secretary's & Treasurer's Reports were approved as written in the newsletter.

Field Reports

Davis field was FANTASTIC!

Medfield was also very nice the water had receded.

Old Business

None reported.

New Business

The next meeting will take place at Davis Field one week later than our usual meeting date.

New Pilots

NONE.

Guests

NONE.

Raffle

NONE

Show & Tell

This meeting was one big Show & Tell.

COME OUT TO THE NEXT MEETING AT DAVIS.
DON'T MISS IT!



Pete Young had an impressive fleet of model aircraft for sale.



Chris shows Jean-Pierre and the power fliers the fine art of glider piloting.



Andrew and Jake set up the Funky Chicken for flight.



Glider pilots return from a short flight.



CRRC 4TH HAND LAUNCH CLASSIC



We had another successful HLG contest this year, with 15 fliers on Saturday, and 12 fliers on Sunday, with about a dozen helpers and spectators.

The weather was very warm and mostly sunny, but the thermal conditions were varied and challenging. The wind direction swung completely, from SSE on Saturday to NNW on Sunday, giving the fliers a pretty good sampling of the wide range of thermal conditions of our Davis Field. Because of its varied topography and vegetation patterns, Davis is one of the best HLG fields in the ESL circuit.



For the first time this year, we had sponsors generously providing raffle prizes:
Enduro Composite Models (Jose Bruzual)
Polecat Aero Works (Denny Maize)
Wright Brothers RC (Alan Wright)
Descriptions of the prizes and links to the sponsors are at www.flyecm.com/crrc/



As last year, we had fliers from as far away as Maryland and central Pennsylvania. Phil Barnes from the Washington DC area dominated both days in the Expert class, with Don Vetter, Shane Spickler, and Mark Drela yapping at his heels.



In the Sportsman class, Stuart Austin won on Saturday, and Jonathan Pozner won on Sunday. Full results and some photos are available at www.flyecm.com/crrc/

-Mark Drela



RUDDER-ELEVATOR-SPOILER CONTEST



The weekend of July 29-30 arrived with dry and hot weather for the RES contest. Saturday's Contest Director Tracy Clark signed up 17 pilots with 21 planes for the competition with the majority being in the unlimited category. Saturday's conditions were "challenging" with strong northwest winds. Downwind launches and fast-moving thermals (during the few times there were thermals) made it difficult to meet the task times. A lot of sailplanes were caught in a combination of sink and strong headwinds that caused the planes to end up far out in the hay field to the east. The only casualties on Saturday were Lincoln Ross' venerable Cumic that ended up in a tree, and Ken Antonellis' Sovereign that took on a dihedral adjustment from an aggressive launch.



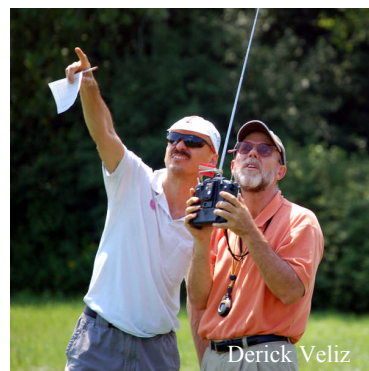
Derick Veliz

Saturday's winners in the unlimited category were Robert Buxton-1st, Mark Drela-2nd and David Beach-3rd. Winners in the 2-meter category were Mark Drela-1st, Lincoln Ross-2nd, Jon Leehey-3rd.

Sunday's weather began much like that on Saturday. However, winds calmed during the morning and the later rounds were flown in beautiful conditions. Twelve pilots with 14 planes signed up for Contest Director Dick Williamson.

Relatively light winds tempted flyers to push the envelope with the result that three planes ended up in the trees south of the line of spruce trees. Dave Spielman recovered his plane and was able to continue the contest. Warren Hopkins' Scepter stayed in a tree. Jim Otis' Majestic was flying low when returning from a trip far to the south of Davis Field.

Headwind and sink put the Majestic in the trees. On his last round, the wings of Dave Walter's Gentle Lady decided to part company with the fuselage right at the beginning of the launch.



Derick Veliz

Sunday's winners in the unlimited category were Mark Drela, 1st, Fritz Bien 2nd, and Lincoln Ross 3rd. Winners in the two-meter category were Mark Drela, 1st, Lincoln Ross 2nd and Dave Walter 3rd. The

weekend overall high score trophy went to Mark Drela.

After the contest, Lincoln Ross brought his bow and arrow to the field to shoot lines up over branches holding the missing sailplanes.



Derick Veliz

The bow is specially equipped with a pay-out reel much like a large spinning reel. He recovered his Cumic and Warren's Scepter. A week after the contest, Lincoln Ross spotted Jim Otis' Majestic in a tall pine tree about 200 yards into the woods.

Running a contest takes a lot of work. The CD's are indebted to the many people who helped including Les Gerhardt who worked the scoring table for two days, John Nilsson who dedicated himself to running the winches and retrievers. Welcome Bender organized Sunday's lunch, and Larry Wetmore and Alan Marshall aided in scoring. Many people provided equipment and contributed to set-up, including Dave Walter, Fritz Bien, Andrew Johnsen, Mark Drela, Ken Antonellis, Miner Cray, Chris Schuch and Jan Kansky.

-Dick Williamson



INITIAL TESTING OF THE A123 M1 LITHIUM-ION HIGH POWER CELLS



I've had the opportunity to meet with product development managers from A123 Systems in the past few weeks where the topic was conducting evaluations of A123's new rechargeable batteries for model aviation purposes. A123 has succeeded in developing nanotechnology-based lithium ion power packs that have been adopted by Black & Decker and DeWalt for a new line of higher power cordless tools. To succeed in this venture, the A123 cells were put through extremely rigorous qualification and certification tests by B&D as well as DeWalt, and also by the Federal government, which is responsible for certifying their safety for public use and transport. In one test video that I viewed, a steel spike is driven through the center of a battery cell, instantly shorting out the internal plates. When this is done with a Lithium Polymer pack the results are spectacular – a sizable flare erupts and “pressurized venting with flames” ensues. On the M1 cell, there's a slight emission of smoke but no flames!

At present A123's M1 cell is the one that will be offered to the public: it's metal jacketed like a conventional NiCd or NiMH cell (unlike LiPos) and each cylindrical cell stands about 2.5 inches tall with a 1 inch OD. Weight of each cell is 70 grams, about 2.5 ounces

Each M1 cell is rated for 2.3 amp-hour capacity and the nominal open-circuit voltage of each cell is 3.3 volts with a 3.7 volt upper charge limit and 2.0 volt lower discharge limit. These voltages are slightly different than LiPos, NiCds, or NiMHs so modified charging procedures have to be used with existing chargers. New chargers, or upgrades to existing ones, will be available soon.

The M1's strong suit is its ability to deliver high currents, tolerate overcharging and overdischarging, and maintain baseline capacities without immediate damage or degradation as is common with other rechargeable batteries, especially lithium polymers. Due to the durability of these packs they can tolerate overvoltages up to 4.2V without immediate negative effects. I am told that repeatedly bringing them over the recommended 3.6V will eventually degrade the life of the battery pack (which is high, up to 1000 cycles, at worst case depth-of-discharges).

I determined that the M1s' lower operating voltages and rather high cell weights (compared to other

batteries) could be compensated by their ability to robustly deliver high currents – at rates that would greatly stress Lithium Polymer packs. As can be seen in the photos, I installed a 3S1P (3 cells in series) 2300 mah M1 pack in a Cermak Breeze motor glider that ordinarily carries a 3-cell 2100 mah Thunder Power LiPo battery pack. The A123 pack weighs about 8 ounces with wiring and connectors; this compares to the TP pack's 4.8 ounces.

The TP pack is advertised as being able to run at up to 15-20C (30 to 40 amps) but user feedback confirms that this level of operations rapidly degrades the pack! Thus I've been flying the Breeze with the TP pack at less than 30 amps peak, primarily to extend battery pack life for this fairly expensive battery.



For the Breeze with the A123 M1s, I ran static tests to pick a propeller suitable for the M1 pack, finally settling on a 14x8 CAM folding prop that drew 42.5 amps at static conditions. This is quite a jump up from the current draw and thrust compared to the 11x8 folder that I had been previously using with this motor and the Thunder Power 3S1P LiPos, of course.

I was a little apprehensive prior to the first flight with the 3-cell A123 M1's on the Cermak Breeze but should not have been. While more of a high performance sport machine than a true “hot liner”, the Breeze shot off at a steep angle and climbed rapidly till it became a dot in the sky. I shut down the motor, folding the propeller to clean up the glide, after about 15 seconds and immediately starting climbing in thermal air. With the power and battery capacity available, I had the potential for lots of flight time in this first flight and finally landed after about 20 minutes of total flight time, primarily out of a desire to fly other planes. This is nice!



The second plane flown with the A123 M1s was a new Hangar 9 Pulse XT ARF, a sport aerobatic model equipped with ailerons, elevator and rudder controls and with an E-Flite Power 46 brushless outrunner motor. I installed two M1 packs in series where each 4-cell pack was rated at 6.6 volts, 4600 mah. Thus each pack could be labeled as a 2S2P and the series combination could be called a 4S2P equivalent pack. I ran careful tests to characterize the performance of the motor, battery pack, and several electric propellers before settling on an APC 15x10E that drew 62 amps maximum at static conditions and pulled about 5 ¼ lbs static thrust, a very respectable number considering the plane's all-up weight is only about 6 ½ pounds! The Pulse XT is fitted with standard servos, a standard sized receiver, and a 5 cell NiCd 1100 mah receiver battery pack. Obviously the plane's weight could be significantly reduced by using a lighter receiver battery pack and lighter servos, but for the purposes of this evaluation, all the airborne radio equipment was "standard" sized.



The Pulse XT's maiden flight was done at the field belonging to the South Shore Radio Control Club in Bridgewater MA. This field has a very smooth and closecut grass takeoff and landing area, allowing me to operate the plane with the spiffy wheel pants

installed. As I had planned to take photos of the plane in flight, the pilot was Horst Hesshaus, a very good flier from the South Shore club. Horst was very pleased with the overall flight performance of the plane in general and the power available from the motor and A123 battery pack in particular. The takeoff was crisp and energetic, and flight results were excellent with plenty of power for vertical maneuvers, high speed passes, and very crisp inside and outside maneuvers. Horst used medium to high power fairly liberally on this first flight and the plane was finally landed uneventfully after about ten minutes flight time as we were not totally sure how much battery life remained. You should note that the M1 cells have a very rapid drop-off when the cells are completely expended, so there's little warning before battery pack depletion; thus use of these cells in a BEC (battery elimination circuitry) mode, where the speed control provides receiver and servo power, would not be a good idea. As is common practice on higher power electric aircraft, a separate receiver battery pack is strongly recommended. Post-flight recharging revealed that about 80% of the A123 M1s battery capacity had been used in the Pulse's first flight, an encouraging finding indeed!



A123 Systems is in the process of setting up distribution plans to market these cells to the hobby industry, offering all-welded connections of 2, 3, 4, or more cells in various series-parallel configurations. Some modelers have resorted to buying new DeWalt power packs and stripping out the M1 cells, but A123 does not endorse this practice. The DeWalt packs do have weld tabs on them but when you disassemble the pack you have to cut them in half. When you solder to this short tab you have to be careful not to heat the anode or the cathode. Applying too much heat to either of these will result in serious degradation in life.

So what are the best applications for these cells in electric aircraft? Space won't permit me in this write-up to present detailed performance comparisons and the following short summary will have to suffice for now. In my opinion, the A123 M1 cells are extremely well suited for medium to high power aircraft where the alternatives would be large NiCd, NiMH or LiPo batteries with high cell counts. By carefully selecting a propeller for a given motor and airplane, it's practical to exploit the high energy density of the A123 M1s and their robust capability to deliver high current levels without overstressing the packs. In my view, the really attractive features are the robustness to charging and discharging as well as their high cycle

life that has been corroborated by the Black & Decker and DeWalt certification testing. As of this writing, retail prices have not yet been frozen but pricing will evidently be more than competitive with the premium quality brands of competitive NiMH and LiPo batteries. There's quite a lot of other details and information that I'll have to present at a future time so stay tuned!

-Peter Young

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DAVIS FIELD UPDATE

The new playing fields at the Lincoln Sudbury Regional High School are not quite ready, so Sudbury Pop Warner Football will return to Davis Field for a brief period this August. Practices will be held Monday through Thursday evenings starting at 5:00 pm August 7-10 and August 14-17. Both CRRC and the Pop Warner folks hope that this will be the last time that football happens at Davis Field.

The Sudbury Youth Soccer program will use Davis Field Monday through Friday evenings and Saturday mornings starting Saturday, September 9. The season usually goes until early November. The detailed schedule for the fall has not been updates yet on the soccer web site.

Nothing is scheduled for Sundays at Davis Field.

-Dick Williamson

SPECIAL THANKS GOES OUT TO THE SPONSORS OF THE CRRC HLG CLASSIC.

Enduro Composite Models - **Apogee 400** - www.flyecm.com

Polecat Aero Works - **Wind Dancer glider** - www.polecataero.com

Wright Brothers RC - **Gambler-AG** - www.wrightbrothersrc.com

Discover Flying R/C Club's Summer Cookout and Open House

Join us for char-grilled hamburgers, hot dogs, sodas, salads, lots of other good food and great R/C flying

*Featuring our Great
and Famous Raffle
This year with 2 Great
Grand Prize's*

**First Grand
Prize**

**Futaba
7CAF
Computer
Radio**



**Second Grand
Prize**

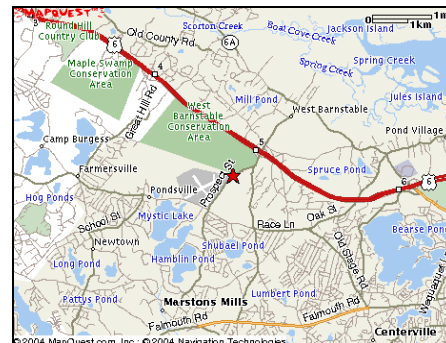
Two round trip tickets on
Island Airlines
for the
Nantucket Airshow
featuring the
US Navy "Blue Angels"



Public Invited. Bring the entire family and join us for an outstanding day of food, fun, friendship, airplanes and R/C enjoyment

Sunday, September 10th, 9:00AM

Marston's Mills R/C Flying Field on the Cape Cod Airport



Contact: Carl Vogel 508-783-7055 or Jim Fournier 508-385-8077
or visit **WWW.DISCOVERFLYING.ORG** for details



33rd ANNUAL CRRC SOAR-IN SUDBURY MA



AUGUST 12th and 13th 2006

SITE: DAVIS FARM SUDBURY ROUTE **117** (¼ mi. East of DAKIN RD.)
SANCTIONS: AMA and ESL Sanctioned Contest
CDs: Anker Berg-Sonne (SAT), and John Nilsson (SUN)
AWARDS: Expert And Sportsman Through 3rd
FIRST TWO-DAY OVERALL
TASKS: Man-on-man DURATION with L-4 LANDING BOTH DAYS weather permitting.
EQUIPMENT: 6-V FORD 3110 on 12 Volts
FOOD: Lunch at the Field. Free to contestants and helpers, \$5.00 for spectators
Frequency Control: 1 flyer/freq: Your frequency guaranteed on receipt of payment
SCHEDULE: **Check-In 8:00 AM; Pilot's Meeting 9:02 AM; First Flight 9:18 AM**
FEES: PREREGISTRATION: \$15 per day, Checks or PayPal to anker@ankersoft.com received before August 10th

REGISTER ON-LINE: [ESL Registration Site](http://www.eslregistration.com) Contact anker@ankersoft.com if your frequency is taken.
We will work something out!

SEND REGISTRATION TO:
MAP AND HOTEL
INFORMATION AND LATEST

ANKER BERG-SONNE
8 Middlemost Way
Stow MA 01775
978 8971750

INFORMATION WILL BE MADE AVAILABLE ON INTERNET AT:
[HTTP://WWW.CHARLESRIVERRC.ORG](http://WWW.CHARLESRIVERRC.ORG) .

=====✂=====✂=====✂=====✂=====✂=====✂=====✂=====

CLASS: EXPERT ☐ SPORT FLYER ☐ JUNIOR ☐

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE# _____

E-Mail _____

CHANNEL 1st Choice _____ 2nd Choice _____

AMA# _____

SAT: ☐ SUN: ☐

Make checks payable to CRRC

CRRC BUILDING AND FLIGHT INSTRUCTORS

This is our list of qualified and willing instructors. Power planes are flown only at the Bill Martin Flying Field in Medfield. Sailplanes and Electrics can be flown at the Davis Farm Field on Rte. 117 in Sudbury. See <http://www.charlesriverrc.org> for directions to the flying fields. If you have any questions about the construction of your airplane, or want to have an experienced pilot pre-flight check your airplane before heading to the flying field, then call any of the building instructors.

INSTRUCTOR CONTACTS

Chief Instructor and Safety

Officer: Jeremy Harkin

jeremy_harkin@yahoo.com

(781-894-6683)

POWER:

Bob Scott	Norwell	781-982-0268
Pete Young	Watertown	617 923-4184
Ken Antonellis	Natick	508-653-4513
Jon Leehey	Wayland	508 358 5721
Dave Walter	Hudson	508-562-5400
Fritz Bien	Concord	978-369-1720
Neil Kaufman	Sudbury	508-443-9647

ELECTRICS:

Bruce Schneider	Hudson	978-562-9900
Fritz Bien	Concord	978-369-1720
Dave Walter	Hudson	978-562-5400
Derrick Veliz	Acton	978-266-1739
Pete Young	Watertown	617 923-4184
Lincoln Ross		

SOARING:

Dick Williamson	Sudbury	978 443-8549
Dave Walter	Hudson	978-562-5400
Bruce Schneider	Hudson	978-562-9900
Fritz Bien	Concord	978-369-1720
John Nilsson	Clinton	508-368-7136
Pete Young	Watertown	617 923-4184
Lincoln Ross	Waltham	781-891-0332

HELICOPTERS:

Tony Davids	Stow	978-568-9598
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BUILDING:

Ruane Crummett	Wayland	508-655-2234
Fritz Bien	Concord	978-369-1720
Joel Foner	Natick	508-653-3560
John Weigel	Natick	508-653-3560
Pete Young	Watertown	617 923-4184
Derrick Veliz	Acton	978-266-1739

TREE CLIMBERS & MEMBERSHIP STATISTICS

TREE CLIMBERS

Tony Morais

A1 Tree Services-Framingham, MA
508-626-0088 800-657-7788

Kenny Greeno

Office Phone: 617-661-8591
Cell Phone: 617-201-5300

Paul Harrington

(508) 376-2573 [Medfield Area]

you. Ken Antonellis is the keymaster. Try kxa@verizon.net. Alex of Alex's RC in Belmont also has keys. Show him a club badge to get the key.

MEMBERSHIP

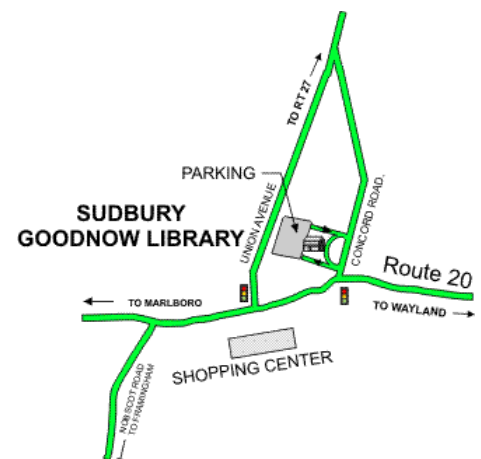
Here are the updated CRRC membership figures for 2006. The table summarizes the membership status from 1999 through current month, 2006.

Year	Renewals	New Members	Peak Totals
1999			135
2000	112	62	174
2001	124	50	174
2002	138	58	196
2003	156	40	196
2004	153	42	195
2005	144	20	164
2006	123	19	142

-John Nilsson

AUGUST DIRECTORS MEETING

The next directors meeting will be, Tuesday, August 22th at 7:30 PM, at the Sudbury Goodnow Library. All club members are invited to attend. This meeting is the day before the club meeting.



KEY INSTRUCTIONS

2006 season keys are available! To get a Key for Bill Martin Field in Medfield, email Jean-Pierre Riu or Ken Antonellis. They will send out instructions as soon as they hear from



THE CHARLES RIVER RADIO CONTROLLERS, INC

2006 MEMBERSHIP APPLICATION

AMA Charter 339

THIS FORM EXPIRES ON MARCH 1ST 2007!

Name _____ AMA No. _____

Street _____ Birth Date (AMA req'd) _____

Town _____ State _____ Zip _____ Tel. () _____ - _____

E-mail _____

To receive membership card and field pass, bring this application to a club meeting, or mail to the membership secretary (address below). You can pay by check or use PayPal. (PayPal to membership@charlesriverrc.org)

Make Checks Payable to:
Charles River RC

MEMBERSHIP CATAGORY	Rates as of March 1, 2006
☐ OPEN Member	\$40.00
☐ JUNIOR member, (under 19 before 7-1)	\$1.00
☐ SENIOR member, (if age 60 before 7-1)	\$30.00
☐ SENIOR member, (if age 75 before 7-1)	Free if AMA member
☐ Full time STUDENT	\$25.00
☐ Family member additional to OPEN membership	\$25.00

John Nilsson /Secretary CRRC
511B Ridgefield Circle
Clinton, MA 01510
Telephone 978 368-7136
E-mail: photoguy205@comcast.net

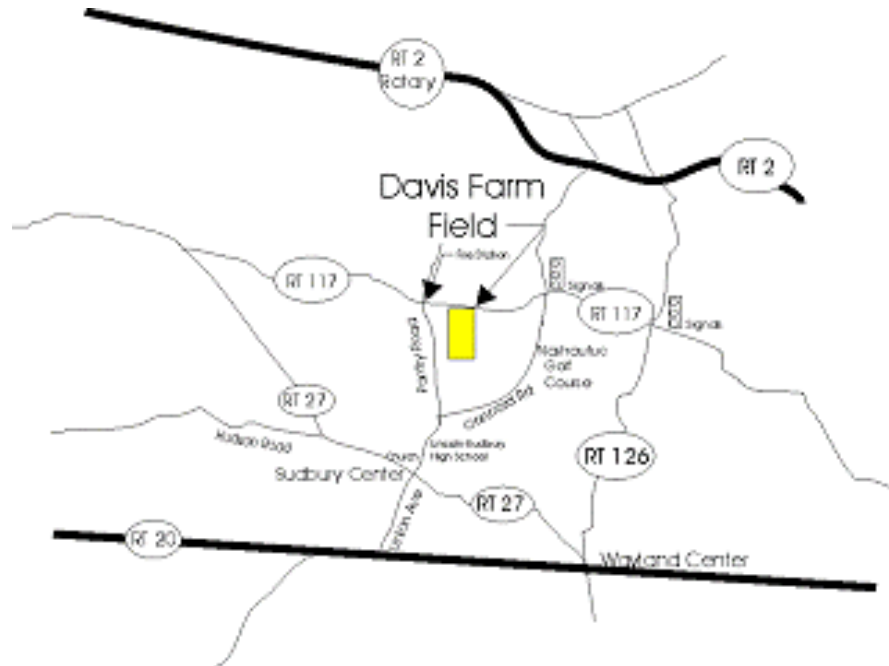
- ☐ I DO NOT want my address to appear in the club phone book

You must be an AMA member in order to receive your CRRC membership card.

To receive your newsletter by us mail, please contact Tomer Jackman, newsletter circulation at the next meeting. See the newsletter cover sheet for additional contact information.

Help reduce operating costs by receiving your newsletter on line. CRRC pays roughly \$10 per year for each mailed newsletter subscription.

DIRECTIONS TO DAVIS FIELD IN SUDBURY



The Charles River Radio Controllars meets the third Wednesday of each month. The August meeting will be one week late and located at the Club's Electric and Glider flying field in Sudbury. Guests are welcome.

Check the Newsletter for the meeting announcement on the second Wednesday of each month.

WINCH LAUNCHES



Many people ask how our gliders make it 600 feet and over into the sky without a motor. The answer is, we use a winch with a cord that goes 200 yards down the field and back, power it with a car battery and throw the plane into the sky with the winch line pulling the plane. It goes up like a rocket.

David Spielman -Editor