

NEWSLETTER OF THE CHARLES RIVER RADIO CONTROLLERS, INC



CRRRC FLIGHT-LOG

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

AMA CHARTER 339

February 2002

VOLUME 39 NUMBER 2

2002 CRRRC OFFICERS

PRESIDENT

Jon Leehey

508 358-5721

jon.leehey@alum.mit.edu

VICE-PRESIDENT

Derick Veliz

978-266-1739

dveliz@omr-architects.com

MEMBERSHIP

SECRETARY

Dick Williamson

978 443-8549

williamson@ll.mit.edu

RECORDING SECRETARY

Laurie Hurwitz

617-923-0725

laurie@ccs.neu.edu

TREASURER

Miner Crary

978 443-8209 minerc@aol.com

NEWSLETTER EDITOR

Fritz Bien

978 369-1720

fritz@spectral.com

Ex-Officio and RAFFLE

CHAIRMAN

Tom Bauer

781 235-7344

tbauer@wellesley.edu

WEBMASTER

Joel Foner

508 653-3560

jfoner@fonerassoc.com

**GENERAL
MEETING
Wednesday
February 20 7:30
PM**

**VERIZON
LABORATORIES
SEE MAP ON COVER**

**R/C SCALE
Mitch and Jack
Buckley, Guest
Speakers**

**Come listen to our
resident scale experts.**

**TIME TO RENEW:
FORM ON PAGE 9.**

FEBRUARY RAFFLE

1st Prize

**Dynaflite Giant Fly-BABY
IMAA legal kit. (1/4 scale)**

This is a great flying and easy to build kit that requires only a 4 channel radio and a 0.75 to 0.90 2 cycle engine: Weight 11-13 lb. Wing Area 1059 sq. in. Wing Loading: 24-28 oz/sq ft

2nd Prize

Choice of:

- Gallon of 10% Nitro fuel,
- Dumas F4U Corsair 17 1/2" Laser Cut Scale Free Flight Kit,
- Herr Engineering Piper J-3 Cub 18" Laser Cut Scale

3rd Prize:

Choice of a neat tool or a Peck Polymers ROG FF-Kit

Special Prize donated by Mike Chovanes of Middlesex Mall Hobbytown

One prize awarded from each category.

Show and tell prize will be selection from neat tools.

Tom Bauer, Raffle Chairman

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TREASURER'S REPORT

Starting Balance 12/31/2001	
Checking(after #1225)	\$2,085.89
Savings	\$4,521.27
Cash	\$ 25.00
Total Starting	\$6,632.16
Income	
Dues	\$1,005.00
Raffle	\$ 81.00
Interest	
Income	\$ 4.38
Total Income	\$1,090.38
Expenses	
Interland Inc. Annual Web Site Fee #1226	\$ 301.80
Millis MAC Field Mowing Paul #1227	\$ 270.00
Buonopane Dues Refund #1228	\$ 5.00
Kevin Cuomo #1229	\$ 5.00
Fritz Bien Jan.	
Newsletter #1230	\$ 185.90
Tom Bauer Raffle Prizes #1231	\$ 74.69
Bank Fee (January)	\$ 9.00
Total Expenses	\$ 851.39
Ending Balances	
Checking (after #1231)	\$2,320.50
Savings	\$4,525.65
Cash	\$ 25.00
Total Ending 1/31/2002	\$6,871.15

Signed: *Minor Crany*

PRESIDENT'S COLUMN

Jon Leehey

Boy do I regret not being able to fly either day of that beautiful weekend in late January. How often do we get sunny, low wind days in the 50s in January? My experiment in flying with skis the previous weekend ended up less than satisfactory. The snow was too powdery for skis and my trainer did not appreciate being hand launched. I knew better, but landing in snow is such fun and it was such a nice day that I could not resist.

These musings on winter flying are just a lead-in for the topic of this month's column – finding and keeping flying fields. As all you glider pilots know, Sudbury soccer cuts deeply into the availability of Davis field during the spring and fall. This situation is unlikely to get better. Fortunately, we have alternate fields in the area that can be used, though they are not nearly as nice and have their own schedule limitations.

In contrast, we always thought that the Bill Martin field in Medfield was safe. Unfortunately, an ominous article in Boston Globe Online (1/22/02) cast doubt on this long held assumption. Something about "transferring the surplus hospital property around Medfield State hospital to the State Department of Environmental Management for parkland." The town of Medfield is also "asking for some additional acreage to use for athletic fields." Sound familiar?

While the facts of this article and how they may affect our flying at the field have yet to be discerned, the article should worry all club members. We all know how difficult it is to find a site suitable for power flying! This issue will be

discussed at the next BOD meeting where somebody will be assigned to find out what is going on. Hopefully I will be able to report in the future that this was a false alarm and that they will be no change in our ability to fly at Medfield

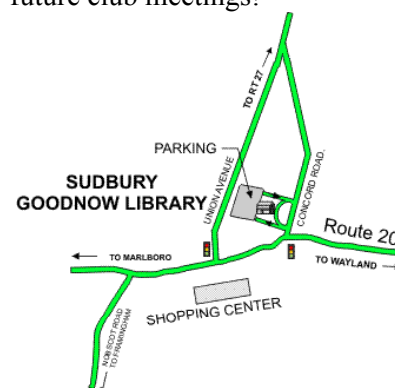
I do not want to be alarmist, but this must be a wakeup call to all of us. We need to constantly be on the lookout for additional flying sites, especially for power flying. CRRC has been very lucky to have Medfield, Davis and our alternate glider fields. But we may have grown complacent.

I will have more on this issue in the future. Until then, happy winter flying!

Jon Leehey

FEBRUARY DIRECTORS MEETING

The next directors meeting will be at the Sudbury Goodnow Library, Tuesday, February 26th, at 7:30 PM. come and help decide what you want to hear at future club meetings!



NOTE

If you have a "please renew" label on your newsletter, that means your membership form has not been processed as of February 8.

JANUARY MEETING NOTES

Laurie Hurwitz

Jon Leehey opened the meeting at 7:45 PM.

Secretary's Report approved as written in newsletter.
Treasurer's Report approved as written in newsletter.

Old/New:

- Once again an attendance book will be passed around the meeting. We ask that newcomers say something more than their name.

Field coordinator's report:

- Good conditions at all of the fields
- The YFFFFF* was fun. Good turnout
- Davis: Flying electric planes – get details from Fritz.
- Medfield: Please drive on high spots on road so as to even out rather than increase ruts. Field dry and 'landable'. Millis was flying with video glasses – get details from Jon.

Old Business:

Membership:

- Some versions of the application do not have the snail/e-mail version. If you filled out a form without this info, please contact Dick with your preference.
- 69 members so far this year. 3 are new to the club.
- Last year's peak was 174 members.
- Medfield lock and keys switch will the last Tuesday in February.

New Business:

- WRAM show 22-24 of February in White Plains, NY. Largest show in the east for RC.
- Volunteer to attend the BOD meeting for the next two months: Tracy Clark.
- Tracy has volunteered to help Dick with PR responsibilities.
- E-mail versions of newsletter: send out announcement of when

the newsletter is available on-line.

- Special notice list will add people who are not on the general list only for announcements. Agreed that the newsletter announcement will go out this way. Please do not respond to these messages.
- Dick has been sent some information from a UK magazine outlet, Traplet Publications. They have several flying magazines available. See Dick for more information.

New pilots: none.

New members or guests:

Lee Arnold – electric
John Cartisser – power
Rupert Kosmala – power
Kenny Foner – gravity powered
Kasra Meydani.
Ying Yuan Zhang – helicopter
Glenn Opland

Indoor flying:

- Saturday 19th January 7-10 PM at the Cambridge Armory
- Friday 22nd February – Lincoln/Sudbury high school 6-10 PM

Auctions:

- 1/27: RI RC Flea Market, Elks Lodge, Smithfield, RI
- 2/10: Northern Connecticut RC Club, 10AM – 5 PM @ Vernon Center Middle School, 777 Hartford Turnpike, Vernon, CT
- 1/27: Lazy Loopers Auction, noon @ Franklin Elks Club

Jon Leehey closed the meeting at 8:35.

Raffle:

- Somethin' Extra kit: Peter Lofgren
- Gallon of fuel: Ed Deveraux
- Tool Sanding bar: Dave Walter
- JR kneeling pad: Paul Murphy

Show and Tell:

Kenny Foner – Pinewood derby car that has an airfoil shape. He won first place with the car in all of its races.

Helmut Lelke – glider with active stabilization system. The experimental plane has elevons which change the moment coefficient of the wing based on info from a sensor at the back of the plane.

Tom Bauer – Allegro light electric based on Mark's plan. 22 oz. 7 cell 500 mA, 12 – 15 minute flights

Mike Cormier – Miss 2 electric won as raffle prize; Speed 400, 27.5 oz.

Fritz Bien – Bristol Scout pre-WWI airplane distributed by Todd's models – 109 grams, or ~4 oz, Flown at Sudbury. Rudder, elevator, electric.

Dave Walter – Somethin' Extra – won about 2 years ago. His pilot is a Loon: 'Ducks know high to fly, so what better pilot?' .46 engine. ~ 4lbs.

Gene Rozea – Great Planes Pete 'n' Poke, with a 4 stroke 48 power.

Mike Zeis – Squadron of rubber band planes built with his daughter.

Mitch Buckley – 'Ultimate in indoor flying!'; ~9 oz. Radical RC Edge 540. Mitch is starting at East Coast Aero Tech in August. Congrats!

Lincoln Ross brought a Mosquito and J3 Lite-Stick electric for indoor flying.

Show and tell prize:

Tom Bauer – Tiger Moth rubber band plane

Guest Speaker:

Bud Corcoran gave a talk on building and flying his own full sized helicopters.

* Year's First Frozen Finger Fun Fly

Remember: Indoor Funfly 6:00-10pm Friday February 22!

CRRC BUILDING AND FLIGHT INSTRUCTORS:

Below 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 as well as Callahan State Park in Framingham.

See <http://www.charlesrivercrrc.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	TOWN	TELEPHONE
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POWER

Ruane Crummett (Chief)	Wayland	508-655-2234
Bob Scott	Roslindale	617 323 6600
Pete Young	Belmont	617-484-0648
Larry Copeland	E. Walpole	508-668-0448
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

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
Peter Young	Belmont	617 484 0640
Lincoln Ross	Waltham	781-891-0332

ELECTRICS

Bruce Schneider	Hudson	978-562-9900
Fritz Bien	Concord	978-369-1720
Dave Walter	Hudson	978-562-5400
Peter Young	Belmont	617 484 0640
Lincoln Ross	Waltham	781-891-0332

HELICOPTERS

Joel Foner	Natick	508-653-3560
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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
Peter Young	Belmont	617 484 0640

HEARD AND SEEN AT THE FIELD

We've had a great winter so far. Flying has been fantastic every weekend in January and the first Sunday here in

February. If you haven't made it out, you might be the minority in the club.

Sunday January 27th was so nice that we wore out 2 winch batteries and 1½ retriever batteries by 12:30, and had to resort to flying electrics. If you own a deep discharge battery and plan to fly in the winter, please charge it and bring it to the field when you come. Batteries don't last as long in the cold weather and some of us would like to fly more during the day.

Some of the guys seen at the field: Larry Copeland was out with an electric. Tomer was showing progress on his new fuselage molding experiments.

Ken Antonellis was out with his Lovesong and Sovereign.

Bill Wood showed the progress he's making on repairing the Spirit ARF and sorting out an electric drive. He was pressed into service and ran the retriever all morning until Les Gerhardt was kind enough to relieve him. Mark Drela was showing that you don't need "no stinkin' winch" by launching his Super Gee to the moon.

Dave Walter showed up with his Gentle Lady (because he was afraid it would be too windy for his Esprit?)

Ron Chichowski showed up with his "Schpot Dorker" and an electric car to race against Don Black.

Last Sunday was a bit icy, but with the calm winds and sunny skies it was ideal electric flying weather. Tom Bauer, Bruce Schneider, Lincoln Ross, Tomer Jackman and I all made it out.

What makes ideal electric flying weather? The good news: The field was hard and smooth, making taxiing a breeze. The batteries were nice and warm after charging and flying in case your hands got cold. No wind to speak of so that you can land and taxi (slide) the plane right back to yourself when the battery is worn down.

The bad news about flying February 3rd: It was too icy to set up the winch. The glare ice made it impossible to reach the flat part of the field. You don't know how steep the field was until you get onto the ice.

-Fritz

FLYING AT THE CAMBRIDGE ARMORY

Drew Bennett

We had a great turnout at the Armory. I'd say there were about 15 "frequent flyers" and another 5 or so who visited to watch. Not bad considering the competition that night was a snow storm and a Pats playoff game! Sadly, I left my camera at home, but I saw two others taking snapshots. Maybe one of them will post?

The armory is just big enough for Tigermoths and Pico Sticks if you have large rudder deflection and stay alert. At several points in the evening there were squadrons of 4+ 'moths in the air at a time.

The smaller/lighter stuff did best. There was a Bleriot which had little trouble navigating the space, some IFO's, including a mini-IFO which did some spectacular stunt flying, and a Moogallo which could easily fly all over in there. The free flight stuff had no problems at all. I was in a bit of a quandary as 10 minutes /hour seemed too little for the free flights to get any trimming and testing done, but there were so few flying compared to the RC crowd that I didn't know as I could justify longer FF-only sessions.

There were two heli's, a Hornet and a Piccolo. Only the Hornet was flying, but he was able to hover at one end of the armory without trouble.

We had several 'casualties' but nothing a little CA or epoxy couldn't fix. I lost a Tigermoth (nose broke) and a mini-IFO (motor mount broke on take-off). Both will be flight-ready before today ends.

I got lots of good feedback from folks, including several who said if this was a regular venue they would start making smaller planes to bring in.

Overall, I think it was a hit. Doubly so considering the evening's "distractions". :)

-Drew

HOW ALLEGRO-LITE WON PRESTIGIOUS AUTO RACE

Joel Foner

Kenny, our eight year old, is in the Cub Scouts. He entered the Pinewood Derby race last week with a "surprising design". A few weeks before, we got the kit, which is:

- A block of pine
 - Four "Competition Wheels" (plastic)
 - Four "Competition Axles" (nails)
- That's it!

Rules: Have to use the kit parts. Can add stuff, but cannot add any bearings, tires must sit flat on surface, tire surfaces can be sanded but must stay slicks with tread contact across surface. Max weight 5 oz. Max length 7". Min body width 1.75" (so that the car can straddle the "rail")

I asked Kenny what shape he wanted to make his car... After thinking he said "I think the wedge shape on the box is wrong. It would make a lot of drag with the big flat back side. I want it to be like a wing, so it will make lift, and the tires will have less friction." He said to me "you can print an airfoil, right? Do you have one that's thin?" I thought for a minute, and remembered the Allegro-Lite airfoils... Designed for low drag, about the right chord - why not! A few minutes later I had printed out an AG35 with a 7" chord, and we looked at it. Then I made a decision. I said "Kenny, if you really want to build the car this way, it will take a lot of work. This is going to be your car, not mine. I'll help you learn to use the tools, and I'll help here and there, but I won't do it for you."

We set off for the workshop, and I drew some curves on some scrap pine, and Kenny started off learning how to use a scroll saw. After three tries he almost gave up, and then had a snack, and he got the next one really close to the line. He decided to go for it, we rubber cemented the template to the side of the official car body block, and he started cutting.

The way his face looked when the blade came out the end of the block and he

picked up the rough cut body was the most incredible thing I've ever seen. He was positively beaming and said "WOW - I did that!". Then he learned how to sand and sand... Then it's practice with a Mototool as a router, and then he routed out space underneath (another cool thing about the flat bottom airfoil!) for some lead to bring the chassis up to weight.

Now Kenny lets out that he wants to do a four-color paint scheme with lightning bolts, "really shiny like my helicopter". Uh - 48 hours to race... No way. I suggested that maybe we'd use trim Monokote for the lightning bolts, and then he decided he wanted to use trim Monokote for everything and he would draw in the pattern on the side with markers.

Race day comes. Car looks cool. Race is man-on-man with three lanes; 32 foot track with a down ramp at the start, and a slight upward incline for the last 15 feet with different combination of cars for each heat. After all cars have raced three heats, the top 6 go to the finals. Then there were several heats with the top 6, switching combinations. Each race the top three get points for position, lowest points at the end wins.

First race: Kenny's car wins by 1 1/2 car lengths to oohs and aahs from his friends. I'd prepped him that he might not win any races, since the other kids had done this before and we're new (I had no idea what to expect since I wasn't in Cub Scouts). Kenny practically fell out of his seat with surprise.

Second race: Kenny's car wins by a nose.

Third race: Kenny's car wins by a car length.

...until his car had swept the entire night's racing, placing first in every single race it was in!

He was grinning past his ears. Thanks to Mark Drela for helping without even knowing it!

As all the kids were leaving one of his friends said "I'm going to build a

wing car like yours next year". Kenny said "that's not fair", which landed us in a discussion about what happens when you raise the ante in a competition ;)



CRRC LIBRARY

The club keeps a library of videos and books. They are made available at club meetings.

Videos:

1996 World Masters Aerobatic Championships
AMA – The Pioneers (25 min)
Byron – New Generation of Modeling Products (17 min)
Byron – R/C Wars
Combat Models – Fighter town Demo (8 min)
Coming of Jets & History of the DC3
Dynamic Soaring
Elmira '97
Endless Lift
Hot Stuff Video (60 min)
Local Flying (Medfield)
Military Aircraft
Monokote 1 & 2
Old Buzzard Goes Flying
R/C Helicopters
R/C Info and Tips
R/C Ornithopter Research Project
R/C Soaring from the Ground Up
R/C Video Magazine, Vol. 1-13
Scale Aircraft Documentation
The Light Stuff (Daedalus Project)
Wring It Out, Vol. 2

Books:

1993 Don Edberg Complete Source Book
AMA – Sound and Model Aeronautics
Aviation Heritage Magazine – B2 Flying Wing
Completely Cars – Harry Higley
Trainers (R/C Magazine)

CALENDAR OF EVENTS

The calendar of events for the year was determined in the January Board of Director's meeting. If you have a favorite event you want included on the 2002 Calendar, please come to the Board Meeting and bring it up. For a up-to-date list of area events check http://www.charlesriverrc.org/calendar_events.htm.

DATE	EVENT	WHERE	CONTACT	EMAIL
February 22, 2002	Indoor Fly-In	Lincoln Sudbury High school	Bruce Schneider	bruceden@ma.ultranet.com
February 22-24	WRAM Show	White Plains NY	See you there	www.wram.org
Apr 6 2002	CRRC Medfield Fun-Fly and Field Cleanup	Bill Martin Field (Medfield)	Jon Leehey or Ruane Crummett	jon.leehey@alum.mit.edu
Jun 1 2002	CRRC Family Fun-Fly	Bill Martin Field (Medfield)	Tracy Clark	tclark@magnemotion.com
Jul 6-7 2002	CRRC 2002 RES soaring contest	Davis Farm Field (Sudbury)	Miner Crary Pete Young?	minerc@aol.com
Aug 10-11 2002	CRRC 2002 Open Class soaring contest	Davis Farm Field (Sudbury)	Dave Walter Anker Berg-Sonne	anker@ultranet.com
Oct 19 2002	CRRC Electric Fun-Fly	Bill Martin Field (Medfield)	Tom Bauer	tbauer@wellesley.edu
Nov 17 2002	CRRC RC Auction	probably Natick VFW (Natick)		
Jan 1 2003	CRRC Frozen Finger Fun Fly	Bill Martin Field (Medfield)		fritz@spectral.com



Picture by Jan Kansky

Mark Drela is getting ready to launch his "Super-Gee" Discus Launch glider. This technique has revolutionized handlaunch :-). For plans, see: <http://www.monkeytumble.com/hlg/supergee.htm>



Picture by Bob Rondeau

Toucan takes to the air in November. Note wimpy cable on winch. It is now fitted with super-orange cables



Picture by Jan Kansky

Mark Drela is ready to his Allegro-Lite from winch on January 27th. Note the nice orange 2-0 battery cables on the winch. They only added about 3 lbs to the launch

NEW PILOT!

From Jose Bruzual (jebnetx@hotmail.com):

Just wanted to let you know Lisa and I had the baby on Tuesday (well, Lisa more than me), Jacob Henry What can I say being the dad, he is the best baby... born Tuesday29th @ 8:20am@7lb 7.4oz.

Looks like Jake is the right size to pilot one of those new scale sailplane models, Jose.



SERVO TESTING FOR SPEED

Helmut Leike

There has to be a conspiracy involved!! The 94145 is by far the fastest servo in my inventory. I immediately ordered a few more for my next flying wing. Good price too at NESP - \$63.95 each. Servo Travel: 60 degrees Slew Time Units: seconds

Servo	Manufacturer	Model	4.8V Advertised Speed	6.0V Advertised Speed	5.4V Measured Speed (4 cells)	6.8V Measured Speed (5 cells)	9.4V Measured Speed (7 cells)	Notes	Meets Spec
1	Airtronics	94145	--	0.07	0.12/0.13	0.10/0.11	0.10/0.10	1, 8	No
2	Airtronics	94141	0.20	--	0.24/0.24	0.19/0.20		1	No
3	Airtronics	94102	0.22	--	0.20/0.20	0.18/0.19		1	Yes
4	Cirrus	CS-25BB	0.12	--	0.13/0.14	Erratic		1, 2	No
5	FMA	S200	0.23	--	0.25/0.27	0.21/0.25		1	No
6	Futaba	S9101	--	0.17	0.18/0.19	0.15/0.15		1	Yes
7	Futaba	S3101	--	0.18	0.21/0.22	0.16/0.17		1, 6	Yes
8	Futaba	FP-S133	--	0.22	0.26/0.27	0.23/0.24		1	No
9	Futaba	FP-S134	--	0.22	0.19/0.20	0.15/0.17		1	Yes
10	Futaba	S9201	--	0.22	0.24/0.26	0.19/0.20		1	Yes
11	Futaba	S148	--	0.22	0.21/0.22	0.17/0.18		1	Yes
12	Futaba	FP-S128	--	0.24	0.28/0.28	0.24/0.25		1, 6	No
13	Hitec	HS-225BB	0.14	0.11	0.18/0.20	0.15/0.17	0.12/0.14	1, 7	No
14	Hitec	HS-205BB	--	0.17	0.23/0.23	0.19/0.20		1	No
15	Multiplex	Micro Speed mc/V2	0.09	0.07	0.25/0.25	0.22/0.22		1, 3, 4	No
16	Volz	Wing Max	--	0.15	0.18/0.18	0.14/0.14		1, 5, 6	No

Notes:

- Two speed measurements are listed - one for each direction of travel.
- Servo exhibits erratic and unreliable operation at 6.8V drive.
- This servo exhibits an unusually long ramp-down time.
- Drive specifications given in terms of 4 and 5 cell operation rather than actual voltages.
- This servo exhibits a distinct overshoot. Measured speed excludes additional overshoot settling.
- Specific drive voltage not indicated with the advertised speed specification.
- Significant overshoot developed with 9.4V (7 cell) operation.
Note that increasing drive voltage to 9.4V (7 cells) does not increase speed - motor magnets are already saturated with 5 cell drive.
-



THE CHARLES RIVER RADIO CONTROLLERS, INC

AMA Charter 339

2002 MEMBERSHIP APPLICATION

Name _____ AMA No. _____

Street _____ Birth Date (AMA reqmnt) _____

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

e-mail _____

I PREFER TO RECEIVE MY NEWSLETTER

☐ ELECTRONICALLY ☐ Via the US Mail

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

To receive membership card and field pass, bring this application to a club meeting, or mail **with a copy of your Year 2000 AMA LICENSE**, appropriate dues, and a **SELF ADDRESSED STAMPED ENVELOPE** to:

**Dick Williamson /Secretary
CRRC
P.O. Box 398
Lincoln, MA 01773
Telephone 978 443-8549
E-mail: williamson@ll.mit.edu**

	New Members	Renewals
OPEN Member	\$30.00	\$30.00
member, (under 19 before 7-1) \$15.00	\$15.00	\$15.00
SENIOR member, (if age 60 before 7-1)	\$20.00	\$20.00
full time STUDENT	\$15.00	\$15.00
Family member additional to OPEN membership	\$15.00	\$5.00
		ADD\$5 if paid after March 1

I'M INTERESTED IN THE FOLLOWING:

- | | | |
|---|--------------------------------------|---|
| ☐ TRAINERS/SPORT PLANES | ☐ ELECTRICS | ☐ HELICOPTERS |
| ☐ GLIDERS | ☐ PATTERN | ☐ RACING |
| ☐ SCALE/SEMI-SCALE/QTR SCALE | ☐ DUCTED FANS | ☐ INDOOR/PARK FLYERS |
| ☐ OTHER (specify) _____ | | |

FREQUENCY DATABASE

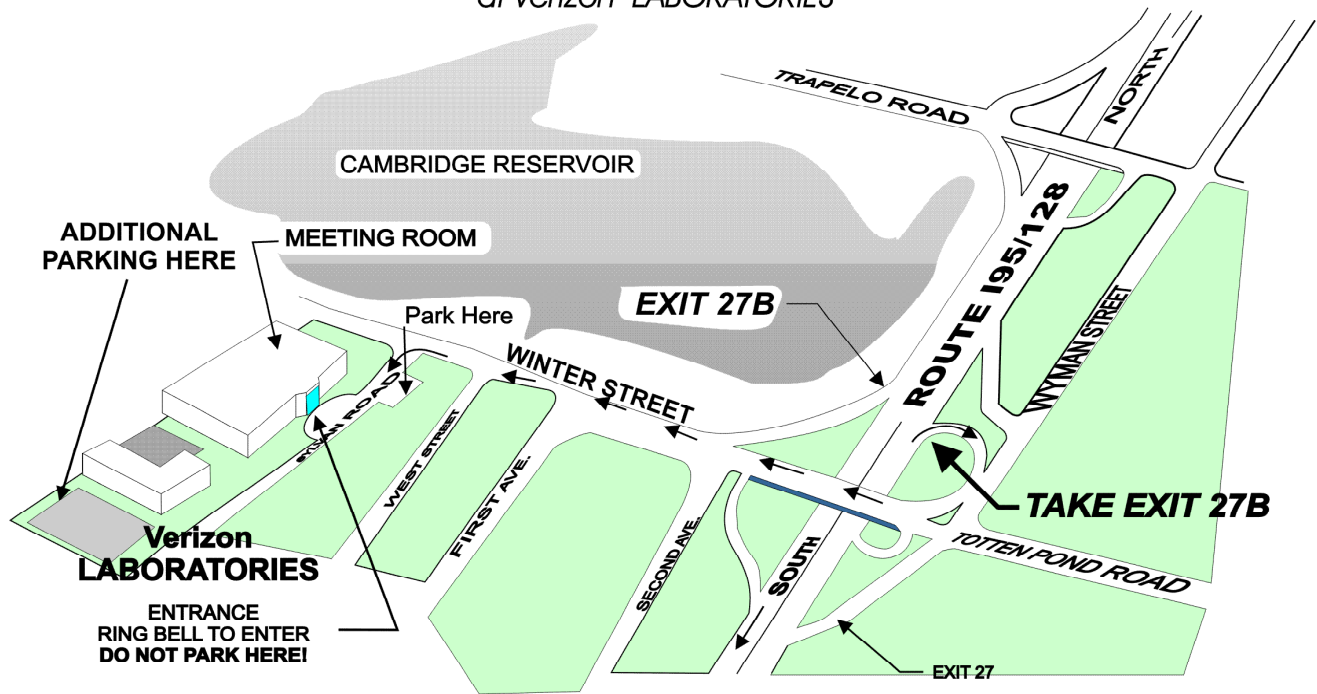
This database is made to help you select future radios that have the fewest conflicts with ones used by others at the flying field. Put the number of transmitters that you own for each frequency. **Add D if it is your primary frequency at Davis farm and M if it is your primary at Medfield.**

11	16	21	26	31	36	41	46	51	56
12	17	22	27	32	37	42	47	52	57
13	18	23	28	33	38	43	48	53	58
14	19	24	29	34	39	44	49	54	59
15	20	25	30	35	40	45	50	55	60

HAM LICENSE CHANNELS: license may be checked at the field!

01	02	03	04	05	06	07	08	09
53.1	53.2	53.3	53.4	53.5	53.6	53.7	53.8	

LOCATION OF MONTHLY MEETING
FOR THE CHARLES RIVER RADIO CONTROLLERS
at Verizon LABORATORIES



Fritz Bien /Editor
41 Saw Mill Road
Concord, MA 01742-2221