

NEWSLETTER OF THE CHARLES RIVER RADIO CONTROLLERS, INC



CRRC FLIGHT-LOG

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

AMA CHARTER 339

March 2002

VOLUME 39 NUMBER 3

2002 CRRC 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 April
17th 7:30 PM

VERIZON
LABORATORIES
SEE MAP ON COVER

The Ford Tri-Motor by Al Dean

Al has done a tremendous amount of research on this old bird and has prepared a fascinating talk about it.

Al is an old time modeler who has flown UC, free-flight, and R/C. He has also built his own airplanes, and just completed a GlassAire. We'll have to get him to tell us about that, too.

APRIL RAFFLE



1st Prize: Sig Riser 2-meter glider

Built by Tom Bauer 16 oz as Built and Covered (Radio not included)

2nd Prize Choice of:

Gallon of 10% Premium Nitro fuel
GloBee Intellitach™- Digital
Tachometer

3rd Prize Choice of a Cool Tool

(Including, but not limited to):

11" Easy Sander Bar, Razor Plane,
Razor Saw Set, Pocket Iron
Thermometer, 6 Minute Epoxy, 100
#11 Knife Blades, or a Peck Polymers
ROG FF-Kit

One prize awarded from each category.
Show and tell prize will be selection
from Cool Tools.

Tom Bauer -Raffle Chairman

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TREASURER'S REPORT

Report Date 3/28/02

Starting Balance	2/28/02
Checking (after #1239)	\$2,778.45
Savings	4,525.65
Cash	25.00
Total Starting	\$7,329.10

Income	
Dues	\$390.00
Raffle	84.00
Interest	
(January, February, March)	12.31
Total Income	\$486.31

Expenses	
Dick Williamson –	
Davis permit & potty #1240	637.00
Andrew Bennett --	
Indoor Flying #1241	25.00
William Riemann --	
Dues Refund #1242	5.00
Tom Bauer –	
Raffle Prizes #1243	74.74
Fritz Bien –	
Newsletter,	
winch repair #1244	217.82
Bank Fee (March)	9.00
Total Expenses	\$968.56

Ending Balances	
Checking (after #1244)	\$2,283.89
Savings	4,538.10
Cash	25.00
Total Ending 3/28/02	\$6,846.99

Signed: *Minor Cray*

APRIL DIRECTORS MEETING

The next directors meeting will be at the Sudbury Goodnow Library, Tuesday, April 23rd, at 7:30 PM. come and help decide what you want to hear at future club meetings!

PRESIDENT'S COLUMN

Jon Leehey

Our annual Field Cleanup and Funfly last Saturday at Medfield was cold, but successful. The field and surrounds were in good shape and the extensive cutback on the access road that was performed last year held up well, so little trimming was necessary. After fixing a few flying station fences and picking up a bit of trash, we were in the air by 10. Kenny cooked hotdogs for lunch which was much appreciated, especially considering that they were warm! It was windy and cold but flyable and fun as usual. We had a good turnout of people from both CRRC and the Millis Model Aircraft Club (MMAC)

Unfortunately, MMAC has been forced to abandon flying at their other field in Millis, due to next-door housing construction. They will be flying exclusively at Medfield this year. Since the Bill Martin field was underutilized the last few years, this increase in activity is welcome and should not cause any overcrowding problems. Millis traditionally has more people flying on Saturday and CRRC on Sunday, so this works out well.

While the field rules for Medfield are posted at the field, published in the CRRC handbook and quite well understood and followed, there are a number of things that will make flying safer and more enjoyable when the field is busy. First, I would like to ask everybody to remember to "announce their intentions". This includes: taxing, taking off, landing, low-passes, and dead-sticks and certainly before going onto the field to retrieve a stalled airplane. Of course, adherence to the standard rules such as pinning your frequency and no flying over the pits cannot be stressed enough.

One area of specific concern relates to helicopter flying at Medfield this year. When field use was light, and beginners were not flying, we allowed helicopters to hover and practice 3D maneuvers directly over the runway. When a fixed wing plane wanted to takeoff or land,

the helicopter pilot simply hovered his copter to the side off the flight-line. This worked fine when there were a limited number of craft in the air and everyone was experienced. Beginners, both fixed wing and rotary, were given exclusive use of the runway area for hovering or landing practice. Again, not a problem when all pilots still got plenty of airtime.

This year, when the field is busy and multiple aircraft are in the air, helicopter pilots will be asked to fly their copters in the same racetrack pattern that the fixed wing pilots are using. Helicopter pilots will also have to refrain from hovering over the runway and both types of pilots must not practice 3D maneuvers low and directly in front of the pilot stations. Following these common sense rules should avoid any potential problems when the field gets busy.

While Medfield does not have a formal hover practice area, one approach that has worked well in the past is for beginners to set up just past the tree line next to the access road. This location is far enough from the runway and enough off the flight-line to not interfere with the other flying activities.

Wishing everyone Fun and Safe Flying!

TREE CLIMBERS

Tony Morais

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

Brian Pikarski

Burlington, MA
617-797-2136
recently rejoined CRRC, building a glider, might find him at Davis soon.

Kenny Greeno

Office Phone: 617-661-8591
Cell Phone: 617-839-1814

Paul Harrington

(508) 376-2573 [Medfield Area]

MARCH MEETING NOTES

Laurie Hurwitz

Jon Leehey opened the meeting at 7:50 PM.

Secretary's Report approved as written in newsletter.

Treasurer's Report approved as written in newsletter.

The attendance book was passed around the meeting. We ask that newcomers say something more than his/her name.

Field coordinator's report:

- Davis: Flying has been great. We've had some nice calm days.
- Medfield: Flying has been reasonable. The ruts are pretty bad, but passable.
- Slope Soaring: a few brave members went to the cape a few weeks ago and seemed to have some fun.
- Indoor flying at Teamworks: Nice facility, but not as big as Lincoln-Sudbury. Going to ask for the larger gym next time. Not good for free flight.

Old Business:

Membership:

- 120-ish members so far this year. 12 are new to the club.
- Charter is in place and the insurance has been sent off for the various sites.

New Business:

- Change of locks will take place in the last week in March.
- Volunteer to attend the BOD meeting for the next two months: Ken Antonellis
- Have information cards for the club. Please take some to distribute.
- Library is here tonight.
- Bill Costello came to talk about the Medfield field. We have been assured that the land for flying is not part of the park planned. Millis is losing their other field.

- A few members of the club went to Brookline for a science day. They had a lot of fun.
- We will send out an announcement when the newsletter is published online.
- New hobby shop in Franklin. Lots of kits, radios, servos. All RC planes. Opens at 7 AM Saturdays.

New pilots: Steve Swartz

New members or guests:

Bill Costello with the Millis Club came to talk about the heavier shared use of Medfield..

Jon Leehey closed the meeting at 8:30.

Raffle:

- Multiplex field box: Ron Weissman
- Piper-J Cub rubber band plane: Drew Bennett
- Bar Sander: Tom Bauer

Winter Projects Night

- **Ken Antonellis** brought his magnificent dual solenoid retriever that he constructed from Laser Arts Plans. The retriever performed admirably at this last Sunday's flying session. The retriever was Kenny's first welding job and seems to be a fine piece of craftsmanship.
- **Fritz Bien** brought his newly constructed Herr Engineering Mini Sport that he purchased at Hobby Town USA in Burlington. He framed the kit in one night and covered it with LT Light Weight Tissue from Balsa Products, equivalent to Aerospa with Ultracote Plus trim (now discontinued by Horizon Hobbies). Total weight 8 oz with a 7 or 8 cell pack, a Speed 280 direct drive with a Günther prop. Fritz reports that it flies well, quite sensitive in pitch and a bit sluggish in rudder. Fritz upgraded the Sig plastic wheels with some super light Dave Brown wheels that he found in the depths of his shop.
- **Ed Omiccioli** brought his Playboy Senior that he won 3rd place with at the WRAM show. The Playboy Senior is a kit from the 40s. Ed remembers flying them as a kid in the

early days of his free-flight career, chasing after them on bike. The kit is powered by a Saito 30 four-stroke and equipped with a three channel Futaba used for rudder, elevator, and throttle. The plane is covered with polyester and dope and trimmed with vinyl automotive trim tape. Ed hasn't flown this masterwork yet, but I think we can talk him into it.

- **Dick Williamson** brought his Goldberg Electra that he converted from the standard power package to a geared reverse Kyosho Magnetic Mayhem car motor with a 4:1 gear reduction. Suggestions from the crowd were to run it on 8 to 12 cells.
- **Derick Veliz** brought his Aveox Lightning electric powered 38 inch aircraft. Derick managed to lighten the kite by 5 oz. He managed to hit 16,000 RPM at 8 amps with his 6x6 prop using a 3.7 oz Mega ACn 22/10/5 brushless motor.
- **Ron Weissman** built an Ace R/C Simple Series "Simple 400" that runs off a Speed 400 motor. Ron plans on equipping the plane with aileron, elevator, and throttle and forgoing the rudder until he is ready for knife edge flight.
- **Pete Young** brought his 48 inch Sig Tri-Star canard. Pete got the plane six years ago for a product review but he never did get around to it. Pete thinks he had identified some design deficiencies and plans on making some upgrades to improve the performance. Pete also brought an octopus type charge adapter that allows him to charge just about any pack with any type plug.
- **Pete Lofgren** showed us the results of the seventh effort of his collaborative vacuum bagging effort with **Tracy Clark** and **Tomer Jackman**. He brought the AG25-AG26 wings to the meeting with the bag sealed and he revealed the results of the bagging effort right in front of the members in attendance. Peeling off the Mylar revealed a mirror smooth finish. The wing was a pink foam design with a carbon spar and a Kevlar leading edge. The wing is destined for a hand launch glider.

Continued on Page 4

- **John Cartisser** brought his Hangar Nine EZ-2 that he purchased at RC Buyers. The plane is OS 46FX powered and equipped with a JR radio
- **Jeremy Harkin** brought his Herr Cloud Ranger, a 42 inch Norvel 0.061 equipped high wing plane with a muffler that brings it down to 80-85 decibels at 10 feet. The plane weights 24 oz ready to fly. He's running a Hitec 555 with HS-81 servos with four channel control. The plane was nicely decked out in transparent red and white covering.
- **Glenn Opland** bought a Multiplex Alpha Club from a kit he bought in Germany while serving the country. The hobby shop threw in a free motor and gear box when they couldn't get the glider version in time for Glenn. The plane is powered by a Speed 600 with a 3:1 gear box on 10 cells.
- **Mitch Buckley** brought his 0.32 powered 0.15 Shrike, 2.25 pound "park flyer", yeah right. He's expecting to get it up to 160mph with a tuned pipe. He's worried about catastrophic wing failure because he didn't fully sheet the wing. Launching the plane is a matter of simply releasing the airplane pointed upwards. The pink and green-yellow fluorescent covering makes for good visibility. He's planning on test flying it this weekend.
- **Jack Buckley** brought an amazing Texas Hurricane, the predecessor of the Edge 540. A 15lb plane with a Moki. Hovering at half throttle and accelerating when going vertical. His only complaint was that the hardware was all metric. Jack couldn't deal with that so he switched to American standard components. This ARF was \$375. Ruane also has one but Jack finished his first so his has the number 1 insignia on the rudder. Ruane is relegated to number 2.

Show and tell prize:

Ron Weissman was the winner of the Show and tell prize. A double winner!

CRRRC 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
Derrick Veliz	Acton	978-266-1739
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
Derrick Veliz	Acton	978-266-1739

PERTURBATIONS IN DAVIS FIELD USAGE

Dick Williamson

ATHLETIC FIELDS IN GENERAL

There is a strain on athletic fields in Sudbury. Several town-owned fields are being reconstructed, but are not ready for the spring season. In addition, the new fields (replacing the old ones) are not in place at the middle school. During the summer, construction will start on the new high school which will cause a big problem for athletic fields in the fall. There is an article before town meeting proposing to buy some open land for additional athletic fields. Stay tuned.

LACROSSE

I have been trying to locate the folks who are using Davis Field for lacrosse practice on weekends. They have not coordinated with Sudbury Park & Recreation so they are not "official" users. Once identified, I will try to discuss scheduling and safe use of the field with the lacrosse coaches.

SOCCER

Spring soccer begins at Davis Field next Saturday April 13 with the first games scheduled for 1 pm. There is no soccer scheduled for Sundays. The last games of the soccer season will be on Saturday, June 15.

LACROSSE CAMP

Davis field will be used for a lacrosse camp from Monday, July 22 through noon on Friday, July 26. Set up for the camp will begin late in the day on Sunday, July 21.

SENIOR CLASSIC GOLF TOURNAMENT

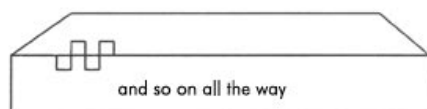
The parking lot at Davis Field will be used for the golf tournament on Friday July 26 through Sunday, July 28. CRRRC flyers should bring their membership cards so they can get in without paying a fee. The lot attendants will direct CRRRC flyers to parking spaces that the attendants will specify.

Dick

Build Your Own Hinges

by Michael Brown

Ever have that happen to you, you are finishing a model you have built and the hobby shop is closed or they just might not have what you are looking for or your budget is non existent and the fun-fly is only a few days away. What do you do?!



Well, calm down as there are several ways to solve your dilemma.

You can build them! Yep build hinges. There are three ways I have made hinges. The first is for very small models. For these you can simply sew the moving surfaces together. A lot of the ACE Simple series planes are made this way and it works quite well.

The second method is to take and cut two pieces say 12 inch x 1 1/4 inch of the same, clear or very light colored covering such as Monokote®. Lay one piece glue-side down and the other glue side up, overlapping them about 1/4 inch and use your covering iron to glue them together. You then cut one-inch strips and these are the hinges. Let's say you are doing the elevator.

Take the horizontal piece and the elevator piece and take the one-inch pieces of hinge and lay them in between the balsa pieces each having the glue side towards the balsa. It looks like a checkerboard.

The third and, in my opinion, the best method is to take two lengths of covering material and sew them together.

You can sew a 5-, 6-, or even a 7-foot hinge this way but remember to sew them adhesive side to adhesive side.

With the last two methods of hinges you have a sealed surface and that can even

help stop the dreaded flutter.

from the *Transmitter*
Northern California Radio Control
Unlimited Flyers
Mike and Sandie Brown, editors
Bella Vista CA

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)

Frequency Information From AMA Webpage

Last October, at the suggestion of the Radio Control Manufacturers Association (RCMA), the AMA Frequency Committee conducted five days of extensive testing at the Muncie IN site. The purpose of this testing was to determine minimum site separation distance requirements when using current radio control equipment.

These tests indicated that sites using the same frequencies may operate as close together as **TWO MILES**, providing the equipment used meets the "guidelines" as established by AMA and published in the *Membership Manual*.

Action is being considered to modify item #5 -Radio Control, in the AMA Safety Code, effective January 1, 2003, to reflect the results of the testing. However, it must be understood that this action is fully contingent upon the members of RCMA being able to provide information to the users of their equipment relative to which receivers meet the guideline requirements.

The proposed change is designed to produce minimal impact on clubs and AMA Headquarters. It should be understood that this action would involve a very small percentage of flying site operations, notably those which operate under three mile separation from other sites.

Substantially, there would be little change from the current Safety Code item, other than allowing operation at two miles using "guideline" equipment without having to arrange for frequency allotment plans or interference testing.

More detailed information will be available soon.

[—AMA Frequency Committee](#)

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
Apr 6 2002	CRRC Medfield Fun-Fly & Field Cleanup	Bill Martin Field (Medfield)	Jon Leehey or Ruane Crummett	jon.leehey@alum.mit.edu
April 17, 2002	Club Meeting	Verizon Labs	Jon Leehey	jon.leehey@alum.mit.edu
April 23, 2002	Board Meeting	Sudbury Library	Jon Leehey	jon.leehey@alum.mit.edu
Jun 1 2002	CRRC Family Fun-Fly	Bill Martin Field (Medfield)	Tracy Clark	tclark@magnemotion.com
July 13, 14 2002	CRRC 2002 RES soaring contest	Davis Farm Field (Sudbury)	Miner Crary Ruane Crummett	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

HEARD AND SEEN AT THE FIELD

Tom Bauer, Helmut Lelke, Chris Badessa, and Fritz Bien went down to Cape Cod Saturday March 23.

The flag at the Exit 6 Burger King was standing straight out WSW. (For those who don't know, that is a 15X25 foot flag).

Tom-

"I got to Duck harbor about 9:15. Hiked out to the beach and the wind was probably blowing about 30mph. Set up my 1-26 with 16oz of lead ballast. Launched and flew very nice. Then I decided to hike back to the car and get the 4 meter Discus I brought along. I had just reinstalled the receiver this morning and was going through the transmitter set-up when...."

Fritz-

"Helmut and I went to Duck Harbor, getting there at 10:30. Tom was already there and had set up 3 planes already. The wind was howling, making it impossible to launch the wings by holding at the trailing edge. The layers of thermal underwear made throwing impossible. Finally, Tom found a spot on the knoll where the rotor was such that there was little wind in our faces so we could launch. Once over the hill, the lift was cooking! Tom showed off his 4 meter Discus which was in its element in these conditions. The thing retains energy very gracefully. It also flies right through the rotor and lands very gently. My wind gauge was reading 35 to 48mph. Helmut flew his tailless wonder, and I crashed around with my

foamies. By 2:30 I had broken all 3 of mine, Tom needed to repair his 1-26 and his P-51 foamies, and we were really winded out. Then Chris showed up with his Mini-Ellipse...."

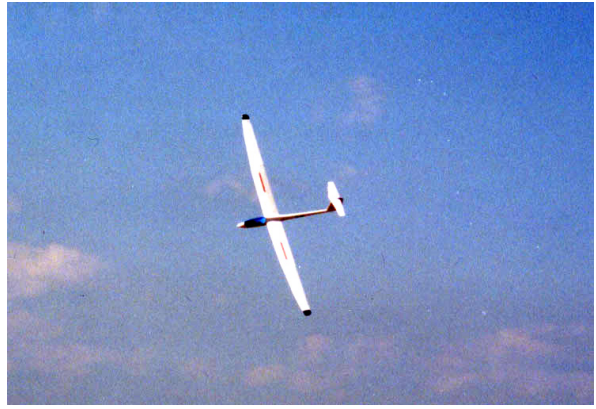
Chris-

"By the way Fritz, my first launch which was witnessed by Helmut went up 2-300Ft in seconds (ballistic conditions). I tried to keep the landings to a minimum...flying longer stretches than the norm to avoid a hard landing. I'm happy to say I left with no damage, only depleted my adrenal gland. Awesome conditions!!"

Pictures taken by Ton Bauer's camera. Perpetrators will remain anonymous.



Tom and Fritz in the wind shadow

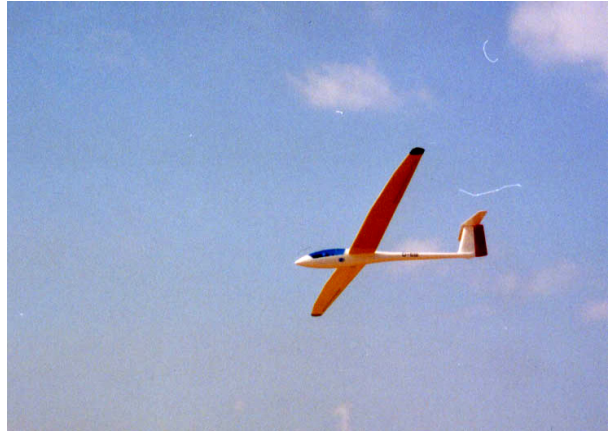


a hard offshore turn



Cruising by the spectators (note the pitch angle)

The following pictures were taken at Davis Farm on a cold clear winter day by Pete Young.



Boy it doesn't get much better than this ..



Picture by Pete Young

Figure 1 Raffle-Master Tom Bauer out of breath holding his Mark Drela designed Allegro E-Lite. This plane gets 20 minute flights on one charge.



Picture by Pete Young

Figure 2 Ken Antonellis proudly displays his Dodgson Lovesong done in patriotic colors



Picture by Pete Young

"You're NOT going to take my picture, are you?" Dave Walter poses (?) with his vintage DJ Aerotech Wizard hand-launch.



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

To receive membership card and field pass, bring this application to a club meeting, or mail with a copy of your Year 2002 AMA LICENSE, appropriate dues, and a **SELF ADDRESSED STAMPED ENVELOPE** to:

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

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

OPEN Member	\$35.00
JUNIOR member, (under 19 before 7-1)	\$20.00
SENIOR member, (if age 60 before 7-1)	\$25.00
full time STUDENT	\$20.00
Family member additional to OPEN membership	\$20.00

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

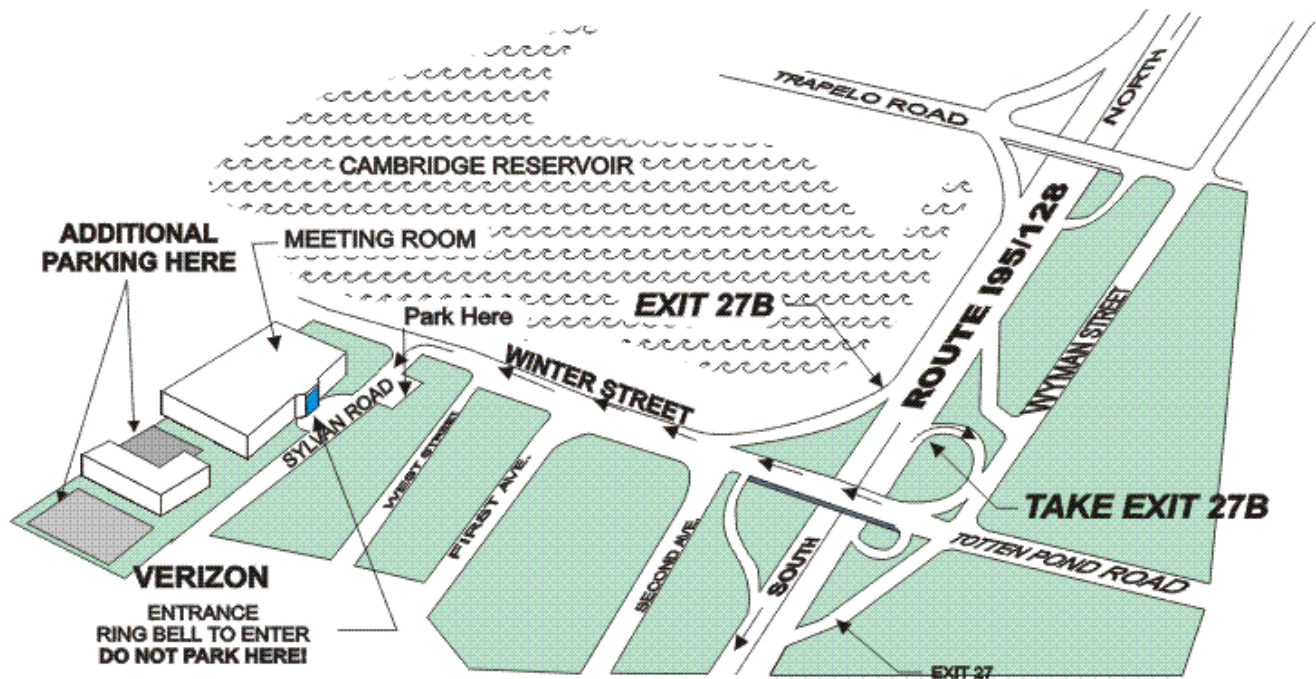
This database is made to help you select future radios that have the fewest conflicts with ones used by others at the flying field. Put the number of transmitters that you own for each frequency. **Add D if it is your primary frequency at Davis farm and M if it is your primary at Medfield.**

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 LABS



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