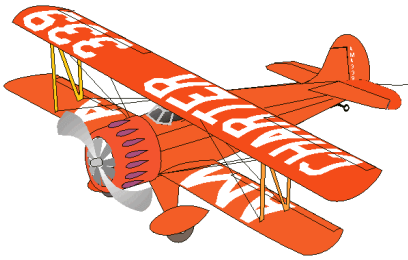
NEWSLETTER OF THE CHARLES RIVER RADIO CONTROLLERS, INC



CRRC FLIGHT-LOG

http://www.charlesriverrc.org/

AMA CHARTER 339 SEPTEMBER 2003 VOLUME 40 NUMBER 9

2003 CRRC OFFICERS

PRESIDENT
Derick Veliz
978-266-1739
dveliz@omr-architects.com

VICE -PRESIDENT
Mark Drela
617-253-0067
drela@mit.edu

MEMBERSHIP SECRETARY
Dick Williamson
978 443-8549
williamson@ll.mit.edu

RECORDING SECRETARY
Jeremy Harkin
781-894-6683
jeremy_harkin@yahoo.com

TREASURER
Miner Crary
978 443-8209
m.crary@comcast.net

NEWSLETTER EDITOR
Michael Cormier
781-894-0720
michaeljc@rcn.com

Ex-Officio and RAFFLE CHAIRMAN
Jon Leehey
508 358-5721
jon.leehey@alum.mit.edu

WEBMASTER
Joel Foner
508 653-3560
joel.foner@fonerassoc.com

GENERAL MEETING

Wednesday
September 17th
7: 30 PM

"Introduction to Giant Scale"

By Bob Scott

Bob will talk about the allure of Giant Scale, and go over the practices which are important for safe operation of these large aircraft.

Table of Contents

Raffle Prizes. ***Jon Leehey*** 1
President's Message. ***Derick Veliz*** 2
A word to the *WISE!* ***Mark Drela*** 2
Davis Fall Foot ball Schedule. 3
More on "The Davis Files" 3
Treasurers report ***Miner Crary***.....3
August General Meeting Notes. 4
F.Y.I. ***Jeremy Harkin***.....4
September Board of Directors Meeting.....4
CRRC Building & Flight Instructors.....5
CRRC Lending Library.....5
TREE CLIMBERS.....5
CRRC Soar In ***John Nilsson***.....6
Membership Statistics ***Dick Williamson***.....6
Two Cycle Field Emergency!..... 6-7
Eliminating Bounce in Your Landings!.....7
Map & Directions! 8

SEPTEMBER RAFFLE

1st Prize *

A Dynaflite Bird of Time ARF 3m sailplane.

2nd Prize *

Pair of genuine Zurich wraparound sunglasses. Perfect for those sunny fall days. Fits over regular glasses.

3rd Prize *

Selection of Cool Tools.

***Show and Tell prize will be A Selection of Cool Tools!**

Thanks to Alex of Alex's R/C Hobbyworks for his discount to the club. Please consider him for your next hobby purchase. Alex's is located in Belmont, near the intersection of Belmont, Watertown and Cambridge, at 129 Belmont St.

--Jon Leehey
Raffle Chairman

PRESIDENT'S Message

Trans-Atlantic crossing success!

Many congratulations to Maynard Hill and the STAR team on their successful transatlantic crossing of a r/c model plane on 11th August 2003.

Exactly one year ago, in the September 2002 issue of ModelFlight, I reported on the 2002 attempt by Maynard Hill and the STAR (Society for Technical Aeromodel Research) team to fly a radio-controlled model plane across the Atlantic from Newfoundland to Ireland - the historic route first flown by John Alcock and Arthur Whitten Brown in their Vickers Vimy in 1919. Three unsuccessful attempts were made, each resulting in the loss of the planes after being launched. The launch window for 2002 was lost before the fourth plane, TAM-4, could be launched, and the team declared their intention to try again in 2003.

Well, now they have done it! On August 5th 2003, Maynard arrived in Newfoundland with five more models. After losing TAM 4, TAM-5 climbed out under the control of Joe Foster at 2215 UTC on August 9th and set off on its 1888 mile journey from Cape Spear, heading for the designated landing point on the west coast of Ireland. Despite a number of difficulties, including the temporary loss of their internet cable link which was being used for the collection of flight data and which was fixed by an engineer up a pole in the dead of night, TAM-5 was finally landed by Dave Brown of the Irish team within 35 feet of the designated landing spot - the picture, right, shows the plane still on the spot!

Photos courtesy of Ronan Coyne, and acknowledgments for the use of material from the STAR website.

http://tam.plannet21.com/

TECHNICAL APPROACH:

The aeromodels used for this project weigh about 11 pounds (5 kilograms) including fuel, and have a wingspan of about 6.5 feet. The motor was an old style OS61 FS with a power take-off through the rear cover to drive a 3- phase alternator running on Colemans stove/lantern fuel (petrol?) using electronic ignition and a standard spark plug. The project was carried out under the leadership of Maynard Hill, who has been responsible for the model design and engine development. During the past three-and-a-half decades, Maynard has established 23 different world records under F.A.I. rules. His models currently hold records for altitude (26,990 ft), duration (33.67 hrs), closed course distance (1301 Km), and speed in a closed circuit (167-mph). The aerodynamic and propulsion aspects of the transatlantic model (TAM) are therefore based on much practical experience.

The TAM model was flown by a pilot using standard R/C hobby gear to a planned cruising altitude of about 1500 ft. There it was put into an autonomous mode, steered by global position satellite signals and an on-board microprocessor. The flight of about 1900 miles was expected to take about 45 hours at 45 mph. No tailwind was needed although it was expected there probably would be one. The position of the airplane, as well as technical data about altitude, speed, engine rpm, and some auto-pilot functions was telemetered to satellites and returned to monitors on both sides of the ocean. On arrival at its destination, an R/C pilot took over control and landed the model.

--Derick Veliz

A word to the WISE!

"ALWAYS check the 'CG' before launch!"

--Mark Drela

Fall Football at Davis Field

The fall Pop Warner football season at Davis Field is in full swing. Practices will be on Tuesday and Thursday evenings. There will also be 9 am to noon practices on Saturdays.

The field should be free for flying all day on Sundays except for four fall Sundays when the field will be used all day for football games. The four game Sundays are

September	7
September	28
October	5
October	26

There may be playoff games after October 26. If the arms on the generator/lighting units are lowered for flying, the arms should be put back in their full upright positions at the end of flying.

Our backup field for fall flying has been Cow Common in Wayland. This field is alongside Route 27:

--Dick Williamson

More on the "Davis Files!"

As many of you know, CRRC's use of Davis Field has been compromised because the field is being used by lacrosse and football programs (both the high school programs and the towns' youth sports programs) that have been displaced from the high school fields where construction is going on. It was my expectation that the high school fields would not be ready for use until spring of 2005. However, there is good news. Despite unanticipated delays, the current schedule should have the high school fields ready by fall 2004.

There were two recent newspaper articles concerning the fields. Here is an excerpt from a September 4, 2003 article in the Sudbury Town Crier:

"Officials get sneak preview of new L-S" The only big snag contractors faced was that the fields did not come out as well as everyone would have liked. 'The contractor has agreed to re-till the fields, add some compost to some of the fields and re-seed them in the next couple of weeks,' Ryan (L-S Building Committee Chairman) said. 'Because the growing seasons are in the fall and the spring, what we'll do is have them seeded for this fall's growing season and then they should be ready for use next fall (in 2004).' While last winter slowed down the construction of the actual building, the school is back on track to be completed by May 2004."

Another article appeared in the Globe West for Sunday, September 7, 2003: "Grass is greener "everywhere else Sudbury teams displaced during field construction.

A poor crop of grass on the playing fields at Lincoln-Sudbury Regional High School is forcing most of the school's outdoor sports teams to find another home for the second straight year....Those teams (football, soccer and field hockey) played off-campus last year, as well, but the fields at the high school were scheduled to be ready for use this month, as part of the continuing construction of a new high school next to the current building...Next spring, the baseball and lacrosse teams also will be forced to play elsewhere, allowing the fields replanted this fall to have two growing seasons for the new grass to take."

--Dick Williamson

Treasurer's Report:

Report Date 8/31/03

Starting Balance 6/30/03	
Checking (after #1310)	3,288.91
Savings	5,602.26
Cash	25.00
Total Starting	**8,916.17**
Income	
Dues	550.00
Fun Fly	139.00
Raffles Receipts (June, July, August)	393.00
RES & HLG Contest Receipts	493.00
Soar-In Receipts	668.00
Interest on Savings (July, August)	7.00
Total Income	**2,250.00**
Expenses	
Dick Williamson – Postage #1311	36.00
Mike Cormier – July Newsletter #1312	32.27
Miner Crary – RES Food, Porta-Potty #1313	279.11
Peter Lofgren – HLG Food #1314	25.50
Ken Antonellis – RES, HLG Food & Bev #1315	109.07
Mike Cormier – August Newsletter #1316	28.02
Joel Foner – Domain Name #1317	75.00
VOID #1318	0.00
Jon Leehey – Raffle Prizes #1319	514.83
Ken Antonellis – Soar-In Food #1320	217.52
Monthly Bank Fees (July, August)	23.54
Total Expenses	**1,340.86**
Ending Balances	
Checking (after #1320)	4,191.05
Savings	5,609.26
Cash	25.00
Total Ending 8/31/03	**9,825.31**

Signature: ***Miner Crary***

AUGUST GENERAL MEETING NOTES

Secretary's Report: May 2003 General Meeting

Derek Veliz – opened the business meeting at 7:42pm.

Secretary's report was not printed in the newsletter.

Treasurer's report was approved as printed in newsletter.

Field Reports

Medfield – Field conditions have improved lots of good flying lately.

Davis – The frequency sign got damaged. Dick reports that the sports schedule (no flying) is as follows:

- Before Labor Day – M/Tu/W/Th 5pm till dusk.
- After Labor Day – Tu/Th 5pm till dusk, Sat 9-12am, 4 Sundays (TBA) all day.

Old Business

John Nillson – Reported on the Soar-In results:

- Saturday – 35 Participants, Mark Drela took 1st in Sportsman, Bruce Schneider took 3rd
- Sunday – 28 participants, Mark Drela took 1st in Sportsman, Fritz took 3rd Expert, and Jan Kansky took 1st overall

Congrats CRRC'ers!

Dick Williamson – Reports that current membership totals 187.

New Business

Next BOD – August 26.

Dick Williamson – Reports that there is a Scale Fly-In coming up in Hadley on August 23/24.

Raffle

Gene Rosen – Graupner Terry.

Dick Williamson – Trim Iron.

Tomer Jackman – Accu-Throw deflection gauge

New Pilots

None.

Guests

None.

Derick closed the business meeting at 7:55pm.

Show And Tell

Mike Cormier – Homebuilt Li-poly charger.

Les Gerhardt – Wing panel for a Bird of Time ARF.

Tomer Jackman – Radical RC Edge 540 (that he completely re-build from scratch of course.)

Lee Arnold – Aeronica Champ profile electric.

Andrew Johnson – Electric "Fokker".

Tracy Clark – home made watt-meter.

John Leehey – Talked about the elevator troubles on his Citabria.

Show and Tell Prize – Lee Arnold.

Speaker

Derick – showed a video of the San Diego Midwinter Electric's Fly-In.

Mark Drela – gave a lecture on the inner workings of flight simulators.

--Jeremy Harkin

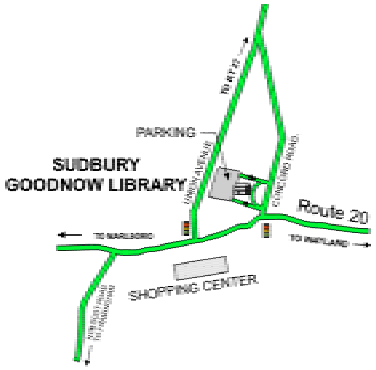
FYI

As some of you know, the Millis club finally lost their primary field, and have move operations to Medfield. The result is that the Saturday and Sunday morning crowds have increased from <10 to 30+. To cope with the extra use, the Millis guys have set up a queue system. Next to the frequency board you will see a horizontal board (it has channel numbers on it, ignore them), just put you pin on here to get in line for flying time.

--Jeremy Harkin

SEPTEMBER DIRECTOR'S MEETING

The next directors meeting will be, Tuesday, September 23rd at 7:30 PM, at the Sudbury Goodnow Library.



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	TOWN	TELEPHONE
POWER:		
Chief Instructor:		
Ruane Crummett		
(Wayland 508-655-2234)		
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
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
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	Waltham	781-891-0332
HELICOPTERS:		
– None Available at present–		
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

CRRC LIBRARY

The club keeps a library of videos and books. They are made available at club meetings. If you cannot come to the meeting, and would like to borrow a video or book, call Ken Antonellis at **(508) 653-4513.**

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)

TREE CLIMBERS

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

Brian Pikarski
Burlington, MA
617-797-2136

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

Paul Harrington
(508) 376-2573 [Medfield Area]

CRRC Soar In - Sunday Aug 10, 2003

"It was a dark and stormy night…"

Sunday morning wasn't much better. Despite the gloomy forecast 28 pilots stepped up to the winch. CD John Nilsson used the same format as Saturday except that the first three rounds were 5, 7, and 8 minutes in <u>any</u> order.

This adds some spice to the routine – "…coming up on five minutes, should I take it or try for 7?" And it helps to mitigate the luck of good or bad air. And of course, you need to keep track of which tasks you have used. The task selected was reported with the score. Luckily we didn't have anyone reporting multiples ("…here is my third five minute score…").

We pushed to get the first three rounds in just in case the weather gods had had enough of this glider guiding nonsense. As it turned out we got in four by lunch with two more after.

We started in light southerly winds with heavy overcast. The wind was moderate south to southwest all day (thank heavens). We tried hard to enforce discipline at the landing area (marked by a line) – select a spot and move to it; communicate with others; approach from the side opposite the landing line; etc.

Kenny provided yet again a great lunch with the four star cookies by Bruce. To cool everyone off, a brief but strong downpour was provided. Amazing how fast some of those old flyers can move when their fancy plane is getting soaked.

We had some casualties: John Hauff went into the trees near the swamp; Jose went for it deep, but couldn't get back; Pete Carr thought it would be fun to fly another plane but no one flew his; Dick Williamson had a crash on launch.

We closed out round six a little after two and got everyone on their way about 2:30.

Results were:

Expert 1st..... Jan Kansky
Expert 2nd.....Hans Wiederkehr
Expert 3rd .....Fritz Bien

(Despite efforts of the CD to misread the score sheet)

Sportsman 1st..... George Hill
Sportsman 2nd ..... Ron Cichowski
Sportsman 3rd..... Mark Drela

Overall Top Score for the Weekend was Paul Bell. Yes it is possible to be overall champ without placing both days. Good, consistent flying for two days ain't that easy.

A BIG THANK YOU to all the helpers – without whom there would be no contest. And thanks to all the entrants – see you next year.

--John Nilsson

MEMERSHIP STATISTICS.

Here are the updated CRRC membership figures. The table summarizes the membership status, and compares recent years.

Year	Renewals	New Members	Peak Totals
1999			135
2000	112	62	174
2001	124	50	174
2002	138	58	196
2003	**156**	**34***	**190**

*The 34 new members include 29 genuinely new members and 5 members who rejoined after a lapse of a year or more.

I will send out an updated membership list around the first of each month.

--Dick Williamson

Two-cycle engine field emergency—dirt in carburetor

Every now and then, when you can't get an engine to run right, the culprit is dirt in the carburetor. The engine was running fine last time out, and you haven't changed the engine settings. Now it quits at full power and won't idle. What's wrong?

If you haven't been to the field in six months, make sure you're using fresh fuel! Fuel that's been sitting around for months, especially if it's left in the fuel tank, could be your problem. If it's not the fuel, put in a new glow plug. Check the clunk hung up in the fuel tank for clogged fuel lines. If your aircraft comes to a sudden stop, the fuel tank clunk can slide forward, getting stuck in that position.

Having eliminated these possibilities, you may have a fuel draw problem caused by dirt in the carburetor, most likely at the narrowest part where fuel is drawn through the needle valve. If backing out the needle valve doesn't allow the engine to run rich like it should, it's time to flush the carburetor.

At home, you can disassemble the carburetor for complete cleaning. At the field, a quick fix is to back flush the carburetor with fuel. This doesn't require carburetor removal and can be done in just a few minutes.

Cleaning the carburetor:

1) Check to see where the main needle valve is set. Then remove it and set it aside. Remove the fuel inlet tubing. Adapt these procedures to engines with remote needle valves.

2) Connect the fuel tubing from your fuel pump to the fuel inlet nipple. Pump fuel. It's a bit messy but only takes a second or so. Almost invariably, the culprit is a particle of dirt lodged at the point where the tip of the needle valve throttles engine fuel. The back flush blows that particle out.

3) You've probably got excess fuel in the engine. To avoid hydraulic lock damage to your engine, remove the glow plug and washer and blow the

excess fuel out of the engine with your electric starter.

4) Replace the glow plug, washer, needle valve, and reconnect the fuel tank line. Adjust the needle valve to its previous setting.
5) Check your engine and fly.

Avoid getting dirt in the carburetor!

In three words—use fuel filters! Somehow, dirt, or minute solid particles get into our fuel. In order to keep these particles out of my engines, I started using multiple fuel filters. Use one at the bottom of the fuel bottle or can. You'll soon find that once in a while, this first filter gets a bit clogged. Back flush it, and you start drawing fuel again. Use another fuel filter between the fuel pump and the aircraft fuel tank. Finally, always use a fuel filter between the aircraft fuel tank and the engine. When fueling the aircraft, disconnect the fuel line at the tank side of the engine fuel filter. This system works and eliminates the old problem of having to periodically back flush the engine to get rid of dirt. When flushing fuel filters, make sure you flush them both ways before inserting them back into the fuel lines.

From The Beacon
Miramar Radio Control Flyers
Dick Doucet, editor
San Diego CA

Eliminating bounce in your landings

In order for a taildragger not to tip over on its nose, its wheels must be ahead of the center of gravity (CG). As it is further forward, it can tolerate rougher ground and the tail wheel can get a better grip on the ground, but the tendency to bounce is worse. But when a taildragger lands, the impact of the main wheels tends to push the nose up, increasing the angle of attack, lowering the tail, and increasing lift—and the airplane is flying again. Eventually, air speed is reduced, and it falls to the ground again, maybe harder. The nose is rotated, and the airplane becomes airborne once again. This process will continue until all flyable air speed is exhausted. The aircraft may continue bouncing due to a phenomenon known as "loping."

Loping occurs in a taildragger when the bounce of the main wheels causes the tail wheel to slam into the ground while the main wheels are still in the air. Then, the tail wheel bounces, slamming the main wheels onto the ground. This argument between the front and rear continues until momentum is lost. But the severity of the loping can increase in the interim.

Loping can occur in trike-geared aircraft as well. If the nose wheel strikes the ground before the main wheels do, the nose is pushed up severely, slamming the main wheels onto the runway. Being behind the CG, the rebound of the main wheels rotates the airplane forward so the nose wheel slams down again, maybe harder than the first time. The process repeats.

Loping in a trike airplane can start with taxiing. If the main wheels hit a bump, weight is shifted forward onto the nose gear. It rebounds, returning weight backward. This ping ponging can grow, especially if the airplane is accelerating. The only way to stop it is to stop the airplane. The longer the distance between the main wheels and the nose wheel, the greater the tendency to lope. Loping also increases if the main wheels are too far aft of the CG. Stiff struts and bouncy wheels aggravate matters.

Loping occurs in a taildragger when the bounce of the main wheels causes the tail wheel to slam into the ground while the main wheels are still in the air.

Trike gear has less potential for bounce because the main wheels can be placed closer to the CG. When the main wheels touch down, the impact lowers the nose and the angle of attack, reducing lift. Some trike-gear designs actually have negative angles of attack when sitting on all wheels. This holds the airplane on the runway. Trikes have more positive ground steering because the nose wheel makes firmer contact with the runway than a tail wheel, especially at higher speeds.

Another little-known cause of bounce is main wheels that are too far apart. This may be shocking because this practice is generally considered good for ground handling. It usually is because it improves directional stability when rolling along the ground. What happens when the airplane lands and one wheel hits the ground before the other? A lateral form of bounce occurs from one wing to the other.

One might think that soft tires and springy struts would increase bounce. Not so. More often, bounce is aggravated by the landing gear that is too stiff. Rigidity does not absorb energy; it reflects it. The hardness of the runway contributes to bounce for the same reason. Some early racing airplanes, such as the Howard Ike, had landing gear so rigid they could not land on concrete runways because of the uncontrollable bouncing that occurred.

Moving the main gear close to the CG reduces bounce and improves tracking. The Spitfire, for example, is quite bounce resistant, but it tips over easily on rough ground.

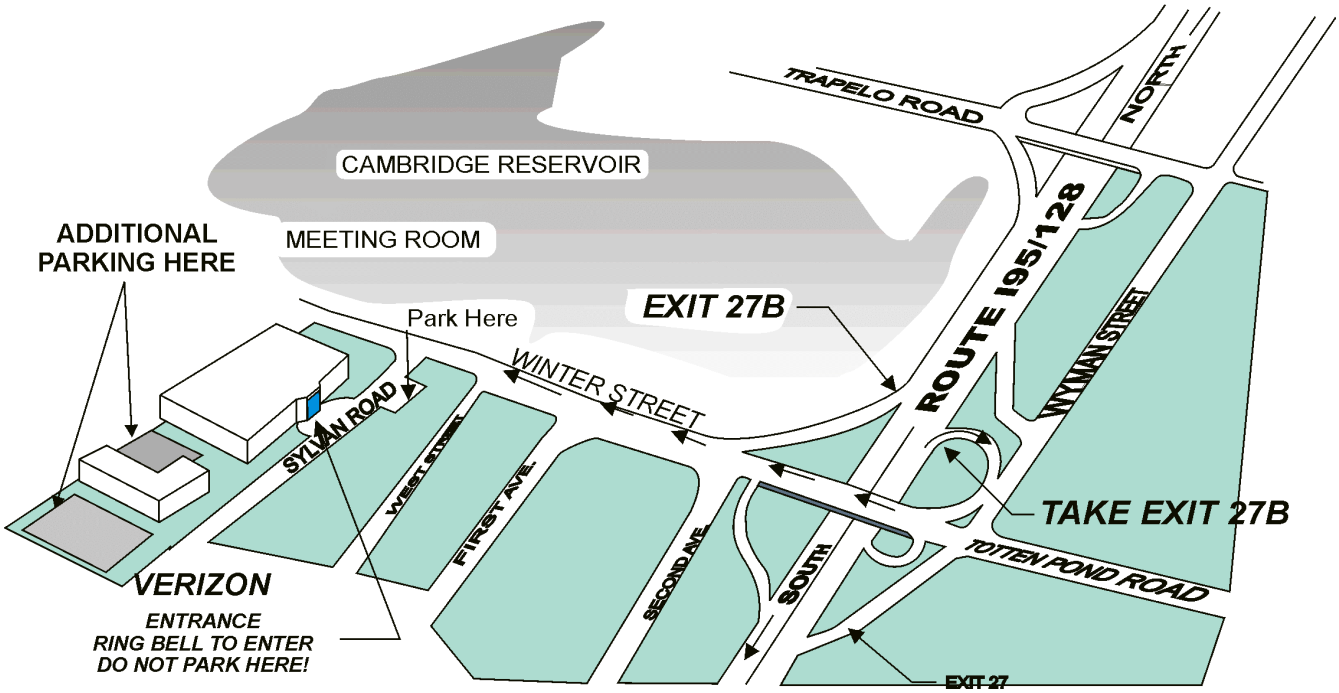
Moving nose and main gears closer together reduces bounce and loping, but it degrades tracking and increases the tendency to tip over on rough ground and in crosswinds.

Oleo struts help absorb impacts, but the spring tension must be just right—stiff enough to keep from bottoming out, soft enough to absorb shock. The same may be said of tires.

If your airplane rebounds into the air after a severe impact, head off further bounce by inching up the throttle slightly. Apply down elevator if necessary to level the nose. This increases air speed, prevents a stall, and lowers the rate of descent.

From Flare-Out
Twin City Radio Controllers, Inc.
Jim Cook, editor
Minneapolis MN

LOCATION OF MONTHLY MEETING
FOR THE CHARLES RIVER RADIO CONTROLLERS
at VERIZON ***LABS***



Michael Cormier / Editor

48 Bacon Street. # 8

Waltham, MA 02451-4349