



AMA CHARTER 339

NOVEMBER 2004

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Joel Foner
508-653-3560
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NEWSLETTER EDITOR

Jeff Newcum
508-655-6417
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General Meeting

**Wednesday,
November 17th
7:30 pm
Verizon Labs
Sylvan Road, Waltham
Exit 27b off I95/128**

Entertainment

**John Smith instructs us on
the fine points of Monokoting**



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November Raffle Prize



and

**WON
a
COOL TOOL
for
Show-n-Tell**



President's Message



Well, it is time to start thinking about next year's club business. We need a 2005 board of directors to run the business aspects of the club.

Fortunately, we have had many volunteers for the various jobs but since Jeff has done such a great job on the newsletter, I think many of us are shying away from this job. We thought

of splitting this job into the Editor and circulation director. (the guy who photocopies and mails it out) Let's discuss at the next meeting.

We also want to think long term and are considering recommending a modest dues increase. Most of the increase would be earmarked to a "field fund." We do anticipate field maintenance fees to increase in the future and we also want to be prepared if we were ever lucky enough to find a new flying field.

So we have plenty to discuss and keep those show and tells coming to the meetings. Everyone loves them. See you there!

- Ken Antonellis

October 2004 BOD Meeting



The dues discussion planned for the October General Meeting was never brought up at the meeting. The new proposal to be reviewed at the November General Meeting is:

- Raise the dues to \$35 now, \$40 after March 1. This represents a \$5 increase over our current fee structure.
- Create a field fund dedicated to maintaining existing fields and procuring new fields should the need arise.

Ken Antonellis reported that we have nominees identified for all 2005 BOD positions except for newsletter editor. He also proposed that a new board position be created to perform newsletter circulation duties in order to offload some of the work from the newsletter editor.

The BOD discussed the upcoming club auction. Ruane Crummett proposed raising the maximum seller's fee from \$10 to \$15. Special tables will be set up to sell items for \$25 and under. Numbered auction cards may be handed out to buyers as an aid for identifying the winner of an auctioned item.

Entertainment for the November meeting has not yet been determined. The first prize raffle item is a Fokker ARF. In fact, it's the same Fokker ARF raffled off last month. The winner donated it back to the club after the meeting!

Recorded by Dave Walter

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

Brian Pikarski

Burlington, MA
617-797-2136

Paul Harrington

(508) 376-2573
[Medfield Area]

MEMBERSHIP STATISTICS

The table summarizes CRRC's 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	40	196
2004	154	35	189

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. For directions to the fields go to <http://www.charlesriverrc.org>. If you have any questions about the construction of your airplane, or want to have an experienced pilot preflight check your airplane before heading to the flying field, then call any of the building instructors.

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

ELECTRICS

Bruce Schneider
Hudson 978-562-9900
Fritz Bien
Concord 978-369-1720
Dave Walter
Hudson 978-562-5400
Derick Veliz
Acton 978-266-1739
Pete Young
Watertown 617 923-4184
Lincoln Ross
Waltham 781-891-0332

HELICOPTERS:

- None Available at present-

POWER

Chief Instructor
Ruane Crummett
Wayland 508-655-2234
Bob Scott
Norwell 781-982-0268
Pete Young
Watertown 617 923-4184
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



We've booked indoor flying at TeamWorks for 2004/05 season. It's the 2nd Saturday night of each month and the time is the same, 9PM til midnight. We are still at Teamworks in Northboro.

In order to be sure that the flyers and the aircraft are worthy of indoor flying, I am going to institute a qualifier that everyone must complete before being allowed to fly on the flight line. Very simply you must fly three counterclockwise flights around the field and three figure eights on the same flight. This not only tests the flyer, but the plane as well. If you can do this, in control, with one plane and not the other, then only fly the one plane that you can control. Once you qualify then you are on your honor the rest of the season and will not be tested again. If you bring a new plane, then qualify it to fly. This is not really a hard task with the right plane and flyer, but think light, slow, and IN CONTROL.

December 11th, Saturday 9-12am
January 8th, Saturday 9-12am
February 12th, Saturday 9-12am
March 12th, Saturday 9-12am

TREASURER'S REPORT

Report Date 10/29/04

Starting Balance 9/30/04	
Checking	\$9,425.34
Savings	\$975.50
Cash Box	\$25.00
PayPal Acct	\$5.22
Total Starting	\$10,431.06
Income	
Dues, Sept. & Oct. raffle	\$389.00
Interest: Savings	\$0.46
Total Income	\$389.46
Expenses	
Ken Antonellis, deposit for auction hall, #1399	\$100.00
Dick Williamson -Rules handbook postage #1400	\$72.00
Fritz Bien -Name badge printing, #1401	\$25.97
Monthly Bank Fees, savings	\$5.00
Total Expenses	\$202.97
Ending Balances	
Checking	\$9,616.37
Savings	\$970.96
Cash Box	\$25.00
PayPal Acct	\$5.22
Grand Total Ending 10/29/04	\$10,617.55

- Scott Anderson



Secretary's Report: October 2004 General Meeting

Club President Ken Antonellis called the meeting to order at 7:35 PM. The Secretary's Report and Treasurer's Report were approved as printed in the October newsletter. The remainder of the meeting was hustled along at a record pace to prepare for the entertainment speaker.

Field Reports

Davis Field, Sudbury

The Pop Warner football people have the field the last 2 Sundays in October, and then the field is ours on weekends until the snow melts. Yay!

Bill Martin Field, Medfield

Some beetles have been chewing on the grass, or maybe its other animals foraging for beetles. In any case, there are some bare spots. Meanwhile, Tom Bauer hosted an Electric Funfly that was sparsely attended, probably due to the gale force winds.

Cow Common, Sudbury

Dick Williamson noted that the Cow Common field is available for glider flying while Davis is overrun by football players.

Old Business

None.

New Business

Tom Bauer volunteered to attend the next two BOD meetings, which will be held at the Sudbury Library.

Dick Williamson reported that there are 188 active members and we are now accepting applications for the 2005 season.



Derick Veliz will put on a flying demonstration at the Discovery Museum in Acton on Saturday, Oct. 23.

Visitors to the monthly meeting included the following:

- Bill Nathanson – He's interested in fixed wing power as well as helicopters.
- Larry Wetmore – From Needham, would like to get started with gliders.
- Egon Okorn – (Member) From Austria, he has flown in the Tyrolian Alps, but not in the US.
- Steve Vaglica – (Member) Has a renewed interest in electrics.

Raffle

- 1st Prize – Chris Baker (?) Fokker ARF, gas or electric.
- 2nd Prize – Fritz Bien – Pitts DE foam aerobatic biplane.

Show-N-Tell

- Steve Vaglica – HoverFly electric heli trainer. Powered through a tether, very light, unusual flying-propeller arrangement.
- Jim Otis – Rocket assisted glider, built in the mid-90's. Flies fast.
- Ian Langley – Gambler DLG that he won in the raffle last month, already built.
- Jeremy Harkin – Pilot Seduction Wild Style. Light construction, 0.46 engine.
- Tomer Jackman – Electric Piper Cub from Model Airplane News plans.
- Andrew Johnson – Latest in LiPoly batteries.
- Warren Chafe – Vectron hovercraft. Foam construction, IR controlled, way cool.



Entertainment

Pete Reed, the chairman of the AMA Rules Committee for pylon racing, gave us a great introduction to the sport of pylon racing. He started with his own roots in pylon back in 1958 and followed the evolution of the sport as it adjusted to advancements in engines and radios. Current planes fly in excess of 190 mph pulled by a .40 engine churning out 3 HP at 23K rpm. Just as in auto racing, the rules committee is constantly tuning the regulations in an effort to even the field and create excitement at every race. For more information, visit www.nepro.org.

Recorded by Dave Walter



Bob Schneider with his little parkflyer



Ian Langley and his GWS Formosa

THE PARAMETERS OF BALSA WOOD

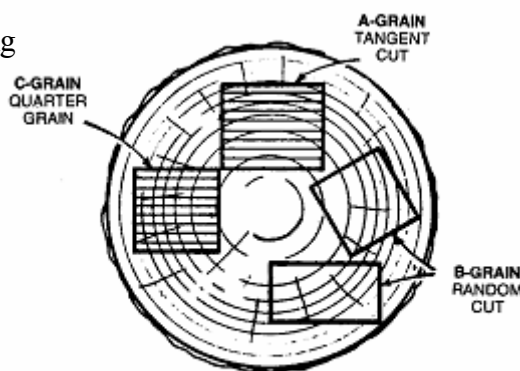
by Roy Bourke

MAAC 204L

I was reading an old (November '99) copy of Model Airplane News (M.A.N.) the other day, and came across a Question and Answer section where readers could mail in a question and have it answered in print by an expert. The question from one reader was "How do you determine if balsa is soft, medium or hard? Is it a factor of weight or is it just how it feels?" In his "Answer" to this question, the "expert" went into a long and detailed explanation of the "ABC" grading system for balsa and its relationship to hardness. It was a very impressive-sounding answer to the reader's question. The only problem is, it was the wrong answer!

The ABC grading system for balsa (and for other woods for that matter) has nothing to do with hardness. It has everything to do with the grain of the balsa, and this is determined by the way the original balsa log was cut, and the way the blocks cut from the log were subsequently sliced into sheets. The cross section of a balsa log, like the logs from other types of trees, has annular rings that are formed as the tree grows from year to year (diagram). The grain structure of a balsa sheet has different characteristics depending on whether the sheet was cut in a tangential fashion from the log (A-grain), radially (C-grain) or half way in between (B-grain). And to go even further with the A, B or C designation, it is possible to distinguish wood which

was cut in a direction between A and B grain (designated "AB" grain) or between B and C grain (designated "BC" grain). And each of these grain structures not only has a characteristic appearance, but exhibits unique properties from the standpoint of strength and appropriate usage in a model airplane.



CROSS-SECTION OF BALSA LOG

A-Grain balsa (sometimes called "tangent cut") has long fibers that show up as long and fairly straight grain lines. It is strong in one dimension, but bends easily in the cross-grain direction and warps easily in that direction. For that reason it should not be used for surfaces that must remain flat (tail surfaces, flat fuselage sides, etc) but is particularly useful for planking around a curved structure (eg. round fuselage sides)

B-Grain balsa (sometimes called "random cut") has fibers that create

grain lines along the sheet, but the lines are shorter than A-grain and the sheet has more stiffness across the grain. This grain structure is probably the most common type found, and is a "general purpose" form of balsa. It can be used for flat surfaces that are partly supported by structure (eg. fuselage sides)-, and for planking around gradual curved structures (eg. wing leading edge planking)

C-Grain balsa (sometimes called "quarter grain") has a very distinctive mottled appearance (very pretty sometimes). It has strength and stiffness in both directions, and is quite warp resistant, but has less strength longitudinally than A or B-grain. It is particularly useful for flat surfaces that are not supported by structure (eg. sheet tail and control surfaces) and surfaces that need stiffness in both directions (eg. wing ribs).

And if you look carefully at a sheet or strip of balsa that is definitely A-grain, the edges bordering on the A-grain surfaces will be C-grain.

But getting back to our "expert's" answer about relationship to hardness, any of these grain types of balsa can be found in a full range of balsa weights and hardness. Instead of trying to answer the reader's question about the hardness of balsa by using the ABC designation of grain structure, our errant "expert" should have related the hardness of a sample of balsa to its density. Density is not a direct measure of hardness, but it is directly related, not only to the hardness but also to the strength of a piece of balsa. And it is a much more important parameter to be considered especially when trying to create a

strong and rigid structure at minimum weight...such as an airplane!

Balsa density is normally expressed in units of pounds per cubic foot, and it is a relatively easy parameter to measure while the balsa is still in rectangular form (sheet, strip or block). It is simply a matter of measuring the three dimensions of a rectangular piece (length L, width W and thickness T) in inches and decimals, weighing the piece in grams, and applying the formula:

Density = Weight (grams) x 3.8096

L x W x T

This may seem like a lot of work, but actually it can be done very quickly with a hand calculator. It doesn't take long to go through a pile of sheet stock, determine the density of each sheet, and mark the figure on the end of each sheet for future reference in selecting a suitable sheet for each function on the airplane. It is even faster to determine the density of a sheet of standard size and thickness using a balsa density chart, but this method is not as accurate as measuring each dimension accurately since sheet stock often varies considerably in thickness from the nominal size marked on the sheet.

So to finally answer the M.A.N. reader's question about soft, medium and hard balsa more correctly and in the shortest way;

Balsa less than 8 lb/cu.ft density is usually considered "soft" or "contest grade"

Balsa from 8 – 12 lb/cu.ft. density is usually considered "medium" and Balsa over 12 lb/cu.ft density is usually considered "hard"

SLOPING AT DEER ISLAND

Saturday Oct 23. Fritz Bien, Tom Bauer, Ron Weissman, and me went to Deer Island for some sloping fun. There were NE winds that were steady at 30 mph, with gusts to 40 mph. Foamies needed 16oz of lead to stay in the air.

by Dave Walter





The Charles River Radio Controllers, Inc.

ama charter 339

2004 MEMBERSHIP APPLICATION

Name _____

AMA No. _____

Street _____ Birth Date (AMA req'd) _____

Town _____ State _____ Zip _____ Tel. _____

E-mail _____

Channel Number(s) _____

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 2004 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

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

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 | ☐ PATTERN |
| ☐ GLIDERS | ☐ HELICOPTERS | ☐ RACING |
| ☐ INDOOR/PARK FLYERS | ☐ SCALE | ☐ GIANT SCALE |
| ☐ OTHER (specify) _____ | | |

MotoCalc

MOTOR/BATTERY/PROP SIMULATION SOFTWARE



Review by Brian Rickman

Price: Free 30 day trial, \$35 to keep

URL: <http://www.motocalc.com/>

If you are trying to choose a motor, battery, gearbox, propeller, or any combination of these items for an airplane, this type of program is indispensable. You put in all the details about your plane including wing area, wing span, weight without power system, airfoil, etc. and then try out various combinations of motor, battery, gearbox ratio, and propeller until you find something that works. The software calculates total weight, wing loading, pitch speed, voltage, current, thrust, climb rate, efficiency, and runtime. It provides this information in your choice of formats including line graphs, tables, and plain English text. Here's a sample of the text output:

JKA BIG T - Astro 05 FAI CBP2000 10 Cells

1. The static pitch speed (44mph) is within the range of approximately 2.5 to 3 times the model's stall speed (15mph), which is considered ideal for good performance.
2. With a wing loading of 14.1 oz/sq.ft, a model of this size will have very sedate flying characteristics. It will be suitable for relaxed flying, in calm or very light wind conditions.
3. The static thrust (57.6oz) to weight (79.4oz) ratio is 0.73:1, which will result in very short take-off runs, no difficulty taking off from grass surfaces (assuming sufficiently large wheels), and steep climb-outs.
4. At the best lift-to-drag ratio airspeed, the excess-thrust (35.9oz) to weight (79.4oz) ratio is 0.45:1, which will give steep climbs and excellent acceleration. This model should be able to do consecutive loops, and has sufficient in-flight thrust for almost any aerobatic maneuver.

In-flight Analysis - JKA BIG T - Astro 05 FAI CBP2000												
Motor: Astro Cobalt 05 FAI 6T#19 #606; 2678rpm/V; 4A no-load; 0.031 Ohms.											Sea Level, 29.92inHg, 50°F	
Battery: CBP 2000 4/5 SC; 10 cells; 2000mAh @ 1.2V; 0.006 Ohms/cell.											100% Throttle	
Speed Control: Castle Creations Griffin 40; 0.0012 Ohms; High rate.												
Drive System: Astro 035-15 3.69:1 Superbox; 13x8 (Pconst=1.31; Tconst=0.95) geared 3.69:1 (Eff=95%).												
Airframe: JKA Big T; 810sq.in; 79.4oz; 14.1oz/sq.ft; Cd=0.072; Cl=0.81; Clopt=0.81; Clmax=1.6.												
Stats: 72 W/lb in; 50 W/lb out; 15mph stall; 21mph opt @ 51% (21.56, 102°F); 21mph level @ 51% (21.56, 102°F); 854ft/min @ 28°; -160ft/min @ -5.1°.												
AirSpd (mph)	Drag (oz)	Lift (oz)	Batt Amps	Motor Volts	Input (W)	Loss (W)	MGBOut (W)	MotGlb Ef (%)	Motor RPM	Prop RPM	Thrust (oz)	Time (m:s)
12.0	2.4	26.8	36.7	9.8	358.2	107.9	250.4	69.9	21560	5843	50.1	3:16
13.0	2.8	31.5	36.7	9.8	358.3	107.9	250.4	69.9	21557	5842	49.5	3:16
14.0	3.2	36.5	36.7	9.8	358.3	107.9	250.4	69.9	21557	5842	48.8	3:16
15.0	3.7	41.9	36.7	9.8	358.0	107.8	250.3	69.9	21569	5845	48.1	3:16
16.0	4.2	47.7	36.6	9.8	357.5	107.5	250.0	69.9	21593	5852	47.4	3:16
17.0	4.8	53.8	36.5	9.8	356.8	107.1	249.7	70.0	21630	5862	46.6	3:17
18.0	5.3	60.3	36.4	9.8	356.0	106.7	249.3	70.0	21668	5872	45.8	3:18
19.0	5.9	67.2	36.3	9.8	354.7	106.0	248.7	70.1	21729	5889	45.0	3:19
20.0	6.6	74.5	36.1	9.8	353.2	105.2	248.0	70.2	21800	5908	44.1	3:20
21.0	7.3	82.1	35.8	9.8	351.4	104.3	247.1	70.3	21883	5930	43.2	3:21
22.0	8.0	90.1	35.6	9.8	349.4	103.3	246.1	70.4	21976	5956	42.3	3:22
23.0	8.7	98.5	35.3	9.8	347.2	102.2	245.0	70.6	22080	5984	41.3	3:24
24.0	9.5	107.3	35.0	9.9	344.7	101.0	243.7	70.7	22193	6014	40.4	3:26
25.0	10.3	116.4	34.6	9.9	341.9	99.7	242.3	70.8	22316	6048	39.4	3:28

Motor performance calculations take ambient temperature and heating effects into account.

Color Key: Propeller Stalled Stall Speed @ Clmax=1.6 Level Flight @ Clopt=0.81 Level Flight @ Cl=0.81

Save... Print... Opinion... Graph... Compare... Close Help

Astroflight 110 Deluxe battery charger



Price: \$129.95

Review by Brian Rickman

URL: <http://www.astroflight.com>

There are plenty of low cost battery chargers on the market that will serve you very well if your needs are modest, but if you want to fly very large or very small planes or have other specialized requirements, a really good battery charger is a worth while investment. The Astroflight line of digital chargers are among my favorites because they are very easy to use. There is a digital display that tells you the charge current, battery voltage, power supply voltage, elapsed time, Mah put into the battery, and peak voltage. There is only one control to adjust, a simple knob to set the current. Cell count, battery type, and all the other details are handled automatically by a microprocessor. The Astroflight 110 Deluxe can charge from 1 to 24 NiCad or NiMH cells with current settings ranging from 50 Mah to 8 Amps. That makes it suitable for almost any electric powered radio control vehicle. It also has a discharge function. If you plug in the battery before connecting the charger to the power supply, it discharges the pack at a rate of 1.25 amps until the pack reaches 1 volt per cell. In discharge mode the digital display shows the pack voltage, elapsed time, and Mah drawn from the battery. So, if your looking for a reliable charger for your NiCad and NiMH cells give the 110 a try.



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