BASS NEWS

The Baltimore Area Soaring Society Newsletter

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The next meeting will be held on March 4th, 7:30 PM, Ridgley Middle School.

BASS January 20004 meeting minutes.
Chris Kuhn, Secretary

Fifteen members were in attendance at Ridgley for this first meeting of 2004 which was called to order at 19:37.

ANNOUNCEMENTS:
Don Vetter introduced Kevin Sharbonda as our new our new president. Also two former members were introduced, Vern Chapin and Bruce Packham. Vern is temporarily out to the hobby since his weekends are taken up as Chief Instructor Pilot for the Mid-Atlantic Soaring Association. Bruce was a founding member of BASS. He has moved back to the area from Florida and will rejoin the club.

TREASURER'S REPORT:
Tony Guide gave his last treasurer's report to the amount of $658.08 in the LTRC account. Tony will be the club's CD for the upcoming year.

BUSINESS:
Old
The minutes of the December meeting were read and approved as e-mailed to the membership.

New
New business centered around the club contest format. It was decided there would be two categories of flying, "woodie" and composite.. "Woodies must have built-up flying surfaces, although composite fuselages are allowed. The contest season will start in March (weather will dictate the date) and due to probable windy conditions the season will open with a composite ship contest. April will be the first "Woodie" round and the schedule will then alternate for the season. The guidelines, start times, locations and rules will be worked out before the season. It was also noted that one contest a month was enough due to members' time constraints. Don Vetter stressed that these club contests were an opportunity to get more members out to fly…what could the club do to achieve this? It was agreed the there must be a minimum of five flyers to make it a BASS contest. The flying in June could be a "family day"

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and picnic but no conclusions were reached.

It was pointed out that BASS has a new webmaster, Don Vetter, and the page should be up in a few weeks. The Yahoo message board is up…a good way to stay in touch and to keep informed.

The ESL sanctioned ECHLC will be held on May 1 & 2 at Villa Maria. Suggestions on getting more HL flyers to attend included; a banquet, getting Dr. Drela as a speaker and asking Phil Barnes to do a demo.

Al DeRenzis reminded all of the up coming Awards Banquet at Rudy's restaurant in Finksburg on January 17.

COMMENTS and DISCUSSION
Since the club has a strong hand launch component and many members are trying electric how do we incorporate these flying activates into the club and contests. Indeed how is the club going to run electric and HL contests?

The club has a supplier for carbon fiber booms and other high-tech stuff. Contact Eric, Kevin or post on Yahoo.

DATES
Lebanon PA flea market is on March 13th
WRAMS show is February 20, 21 & 22nd

ADJOURNED
20:30 +/-

SHOW & TELL
Russ Bennett flew , in a small interior space, his Piccolo electric helicopter and made an excellent hovering flight in the

In This Issue

The AMA Safety Code is printed on pages 4 and 5. Although some of the entries apply to special areas which are not part of our regular activities, a review of all aspects of the code gives insight into some of the risks and concerns associated with our sport and hobby.

The Slope Soaring Column in the February issue of Model Aviation has a section on Cumulative Epoxy Allergy. Well worth reading and heeding because the consequences of improper use and overexposure (which is undefined at this point) can range from nasty to lethal.

Members Bill Cavanaugh and Al Flesher have given us articles this month. Many thanks.
Regarding Al's article on Lithium Polymer batteries, please be aware that there is a risk of fire when charging these batteries unattended. Having said that, Al's article offers a very practical solution to the dilemma of how to charge up these critters. The scanning of the figures supplied by Al do not do them justice, but hopefully they are clear enough to be understood.

I'm sorry to report that member Hal Decker has resigned from BASS. Hal explained in a very nice letter that he is doing so with regret, but his full-scale aviation projects will be consuming his time at this point. I'm sure BASS will join me in wishing Hal the best, and we would welcome his return when circumstances warrant.

WHY BE YELLOW?
Bill Cavanaugh

During the week before Christmas Betsy and I found that we had a "free" day and she suggested that we go to Savage Mill to browse. In case you aren't familiar with Savage Mill, it is a restored and renovated group of buildings dating back to the 1800s that were used for milling, weaving and light manufacturing. Savage Mill is now a complex of upscale stores selling antiques, expensive furniture and artistic household items – the kind of stuff that women love. My immediate thought was, " Hey, if we want to browse, let's go to Home Depot or The Sharper Image, stores that have some really neat items." However in the interest of family tranquillity, these words never got out of my brain and nowhere near my mouth. "Sure," I said, "Let's go."

While Betsy was looking over whatever she was looking over, I moseyed around the antiques; I am always amazed that people pay enormous prices for ordinary items that we threw away when I was a kid, like bottles, old beat-up bread boxes and magazine ads. I was perusing some of these ads in one of the booths that had them categorized by subject: appliances, automobiles, etc. when I noticed one called Boats, Trains and Airplanes. Of course I had to check out airplane ads. I found one by the Piper Aircraft Corporation, Loch Haven, Penna., U.S.A. advertising "The New 1948 Piper Cub Special."

Now, every airplane modeler and anyone connected with aviation in any way knows that all Piper Cubs came from the factory painted Cub Yellow. This is what is known as conventional wisdom. This color became so famous that you can now buy "Cub Yellow" paint in any model supply store. Sure, there were some red ones and white ones around, but these were recovered and repainted Cubs. Factory-fresh Cubs were always Cub Yellow. Right?

Wrong! The New 1948 Piper Cub Special was painted two colors, wings and upper fuselage was Cub Yellow, while the lower fuselage and rudder were blue. That's right, blue – right from the factory. If you can print out this newsletter on a color printer, the accompanying illustration will be proof positive.

All stories should have some sort of a moral or message. This story ends with not one, but two morals, and here they are:

1. Keep your wife happy by going along with her desires; you might even find them interesting (A happy wife is one of life's joys and has all sorts of benefits).

Building Tip
Randy Kleinert

Maybe this is well known to everyone but me, but just in case, here goes:

For years I have used fine point felt tip pens for marking on balsa wood. They work pretty well, but leave a bit of a fuzzy line. Sanding, adhesives and finishing coats make things worse. Recently I've tried GEL INK ROLLER PENS (Scholar 0.5mm and Pentel Hybrid Gel Roller 0.3 mm). They mark clearly on balsa, but do not run like felt tip pens, even when exposed to alcohol, adhesives or finishes. They do not mark on plastic films for some reason, so don't throw away your felts tips which are excellent on plastic films and clean up with alcohol.

2004 OfficialAMA National Model Aircraft Safety Code – Effective January 1, 2004

I understand that my failure to comply with the Safety Code may endanger my insurance coverage.

(Changes are identified in bold.)

GENERAL

1) I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.

2) I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.

3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.

4) The maximum takeoff weight of a model with fuel is 55 pounds, except models flown under Experimental Aircraft rules, Document Number 549*.

5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. Note: This does not apply to models while being flown indoors.

6) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine(s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.

7) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind) including, but not limited to, rockets, explosive bombs dropped from models, smoke bombs, all explosive gases (such as hydrogen filled balloons), ground mounted devices launching a projectile. The only exceptions permitted are rockets flown in accordance with the National Model Rocketry Safety Code or those permanently attached (as per JATO use); also those items authorized for Air Show Team use as defined by AST Advisory Committee (document available fromAMA HQ). In any case, models using rocket motors as a primary means of propulsion are limited to a maximum weight of 3.3 pounds and a G series motor. **A model aircraft is defined as a non-human-carrying device capable of sustained flight in the atmosphere not exceeding the limitations established in this Code, exclusively for recreation, sport, and/or competition activities. The operators of radio control model aircraft shall control the aircraft from the ground and maintain unenhanced visual contact with the aircraft throughout the entire flight operation. No aircraft shall be equipped with devices that would allow for autonomous flight.**

8) I will not consume alcoholic beverages prior to, nor during, participation in any model operations.

9) Children under 6 years old are only allowed on the flight line as a pilot or while under flight instruction.

RADIO CONTROL

1) I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.

2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.

4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (Only properly licensed Amateurs are authorized to operate equipment on Amateur Band frequencies.)

5) I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed below in this paragraph. Flying sites separated by three miles or more are considered safe from site-to site interference, even when both sites use the same frequencies. Any circumstances under three miles separation require a frequency management arrangement which may be either an allocation of specific frequencies for each site or testing to determine that freedom from interference exists. Allocation plans or interference test reports shall be signed by the parties involved and provided toAMA Headquarters. Documents of agreement and reports may exist between (1) two or moreAMA Chartered Clubs, (2)AMA clubs and individual AMA members not associated withAMA Clubs, or (3) two or more individual AMAmembers, Document Number 551*.

6) For Combat, distance between combat engagement line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.); electric motors will be based on equivalent combustion engine size. Additional safety requirements will be per the RC Combat section of the current Competition Regulations.

7) At air shows or model flying demonstrations a single straight line must be established, one side of which is for flying, with the other side for spectators.

8)With the exception of events flown underAMA Competition rules, after launch, except for pilots or helpers being used, no powered model may be flown closer than 25 feet to any person.

9) Under no circumstances may a pilot or other person touch a powered model in flight, **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing.**

Organized RC Racing Event

10) All officials, callers, and contestants must properly wear helmets, which are OSHA, DOT, ANSI, SNELL, OR NOCSAE approved or comparable standard while on the race course **with aircraft(s) in flight.**
11) An RC racing event, whether or not anAMA Rule Book event, is one in which model aircraft compete in flight over a prescribed course with the objective of finishing the course faster to determine the winner.
A. In every organized racing event in which contestants, callers and officials are on the course:
1. All officials will be off the course except for the starter and their assistant.
2. "On the course" is defined to mean any area beyond the pilot/staging area where actual flying takes place.
B. I will not fly my model aircraft in any organized racing event which does not comply with paragraph A above or which allows models over 20 pounds unless that competition event isAMA sanctioned.
C. Distance from the pylon to the nearest spectator (line) will be in accordance with the current Competition Regulations under the RC Pylon Racing section for the specific event pending two or three pylon course layout.
12) R/C Night Flying is limited to low performance models (less than 100 m.p.h.). The models must be equipped with a lighting system that clearly defines the aircrafts attitude at all times.

FREE FLIGHT

1) I will not launch my model aircraft unless at least 100 feet downwind of spectators and automobile parking.
2) I will not fly my model unless the launch area is clear of all persons except my mechanic and officials.
3) I will employ the use of an adequate device in flight to extinguish any fuses on the model after it has completed its function.

CONTROL LINE

1) I will subject my complete control system (including safety thong, where applicable) to an inspection and pull test prior to flying. Pull test will be in accordance with the current
Competition Regulations for applicable model category. Models not fitting a specific category as detailed shall use those pull test requirements for Control Line Precision Aerobatics.
2) I will assure that my flying area is safely clear of all utility wires or poles.
3) I will assure that my flying area is safely clear of all non-essential participants and spectators before permitting my engine to be started.
4) I will not fly a model closer than 50 feet to any electrical power line.

GAS TURBINE

1) I will not operate any turbine engine (axial or centrifugal flow) unless I have obtained a special waiver for such specific operations.
2) I will fly my model in compliance with all requirements specified inAMA Document Number 513*, at all times.

GIANT SCALE RACING

1) I will fly my model in compliance with all requirements specified inAMA , Document Number 535*, at all times.

CLUB FLYING OPPORTUNITIES

There will be flying at the National Building Museum, Washington, DC, on Sunday, March 7: 10 am - 4 pm, This will be the last session of the season.
Plese contact Randy Kleinert if you want to attend. By March 3rd, I will submit attendees' names to get you on the admission list.

Wednesdays, 1:00 PM, Villa Maria, weather permitting, The BASS "Bald Eagles" gather at Villa Maria to fly gliders and electrics. Contact Bill Cavanaugh for details: [redacted]

Buy and Sell

All new JR radios;
JR 378 complete set with either 4 ballbearing 537 standard or two JR micro and the R700 very small slimline 7 channel receiver. Standard new set at $290. and with micro servos$305. Also 4 new 537 servos for $75. Bernie [redacted]
Craft Air Step Two kit. 77" span, $25.00 call Ken Hands [redacted]

Charging Lithium-Polymer Batteries
by Al Flesher

Advances in battery technology continue to filter down to our hobby much to the delight of those of us who fly with electric power. During the last 15 years we have witnessed a steady progression of energy density in Nickel-Cadmium cells and only a few years ago Nickel-metal-hydride cells gave us a doubling of energy density.

Now that Lithium-Polymer (Li-Po) cells have become readily available, modelers have found ways to use them to advantage. For the same voltage, Li-Po cells have about four times the energy density of Ni-Cads, but there is a downside. Ni-Cad cells are capable of extremely high current, typically 20C Amps, where "C" is the cell's capacity in Amp-hours. The first Li-Po cells to hit the market had current capacity of only 1C. This then improved to 2C and the newest cells are 6C. If we are lucky, this trend will continue.

The consequence of the lower current capacity of Li-Po cells is that, in order to have sufficient ampacity for the flight motor, the Li-Po battery needs around 2.5 to 3 times the energy capacity of a Ni-Cad battery. But this penalty still results in a net savings in weight.

Li-Po cells have other advantages as well:

* At normal room temperature, they retain 95% of their charge after 6 months.
* They are not chemically capable of developing memory problems.
* They cannot explode if overcharged, over-discharged, punctured, or short-circuited. However, there are accounts of high temperature causing a fire in the model if improper charging procedures are used.

Now for the bad news. The chemistry of Li-Po cells requires different handling in both charging and discharging. Here are the basic rules:

* A Li-Po cell will self destruct if charged to voltage higher than 4.2 Volts.
* A Li-Po cell will self destruct if discharged to voltage below 2.5 Volts. The lower part of the discharge curve is steep, so we usually use 3 Volts as safe.
* Cell life will be compromised if it is charged at a rate higher than 1C.

In order to comply with these unusual characteristics, special chargers have been designed that have e-proms with a specific current/time prescription. Figure 1 is a graphic representation of the charging prescription. It consists of three phases. Phase 1 is a constant current "precondition" phase. Phase 2 is the constant current "fast charge". Phase 3 is a constant voltage "top off" phase. Astro Flight makes one of these chargers with adjustable rate which costs $130.

Does this mean that our clever peak-detecting Ni-Cad chargers are now obsolete? Not if you are willing to compromise a bit. We noted in Figure 1 that the first two phases of the Li-Po charging cycle are at constant current. Ni-Cad chargers are constant current devices, so they can be used for Phases 1 & 2, but not for Phase 3.

Figure 2 depicts a Li-Po charging prescription for which a constant current charger can be used. Phase 1 is 0.3C Amps for 25 minutes, Phase 2 is 1.0C amps for 40 minutes, and Phase 3 is 0.3C Amps for 5 minutes. This cycle will charge the battery to approximately 80% of capacity. Keep in mind that the Li-Po battery has much more capacity than the Ni-Cad battery being replaced, so the missing 20% of capacity is not necessary.

The first time this charging cycle is used, I recommend that it be stopped near the end of Phase 2 and check the battery voltage to ensure it is not too high. This can be a problem if the battery started charging at a state of incomplete

Figure 1 - Li-Po Charging Prescription

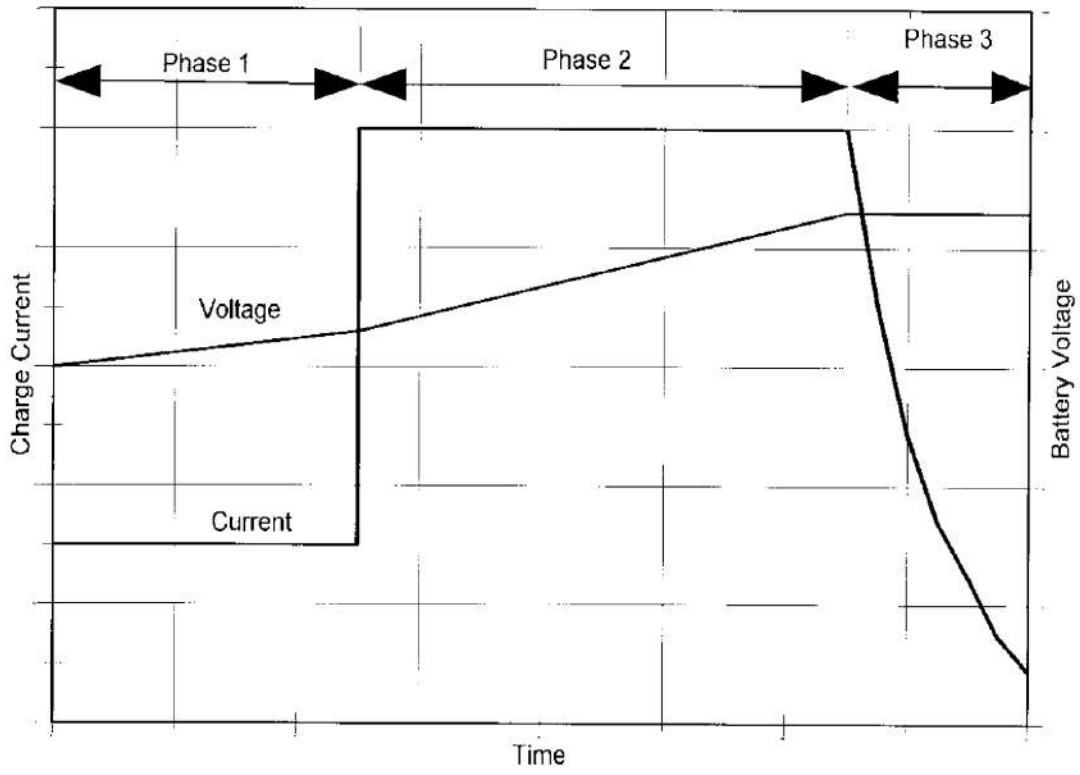
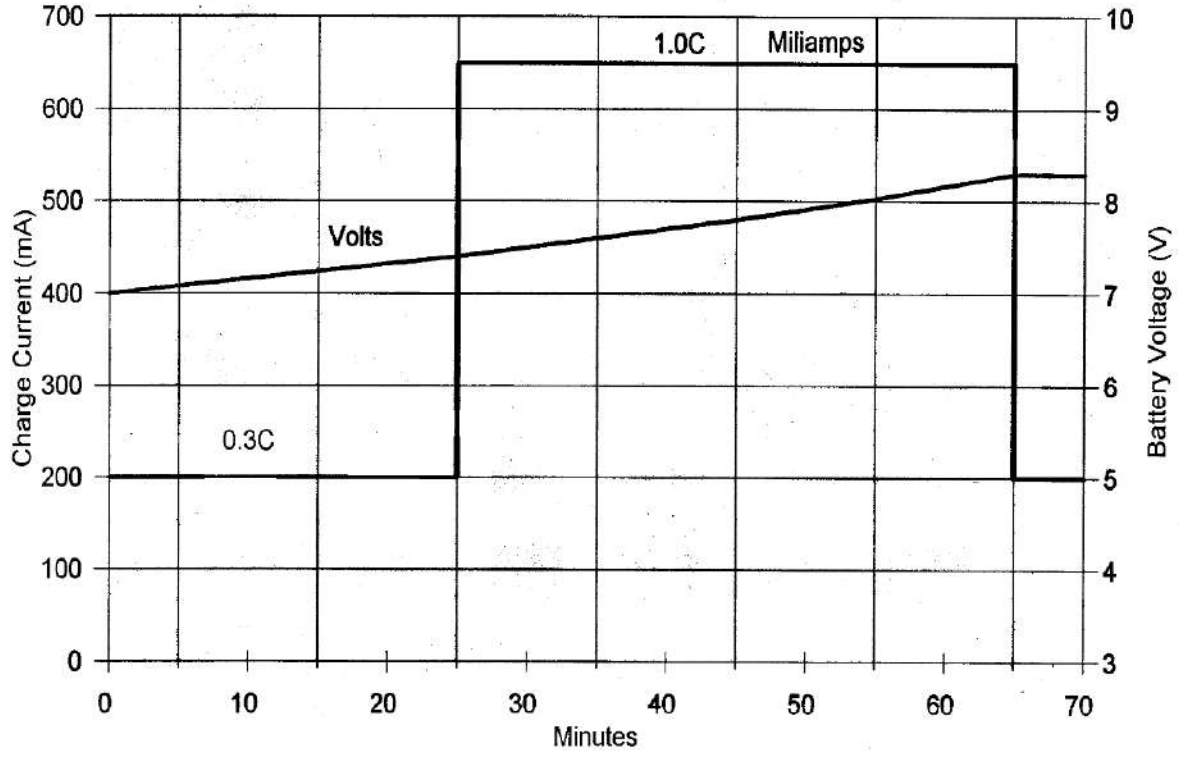


Figure 2 - Li-Po Battery Charge

Two-cell, 650 mAh



discharge. Also note the Battery Voltage scale of Figure 1. If you are charging one Li-Po cell, the Voltage scale will be

East Coast Soaring League
2004 Contest Schedule

05/01 - 05/02	BASS HLG - Baltimore, MD	John A
05/22 - 05/23	BRASS - Waynesboro, VA	Tom I
06/05 - 06/06	LASS - Lancaster, PA	John M
06/19 - 06/20	LISF 1 - Syossett, Long Island, NY	John I
07/10 - 07/11	DBSF - Reading, PA	Dale I
07/25 - 07/31	AMA/LSF NATS (not ESL)	John A
08/07 - 08/08	CRRC Soar-In - Sudbury, MA	Anker
08/21 - 08/22	SKSS 1 - Newark, DE	Rober
09/11 - 09/12	CASA Open - Warrenton, VA	Skip S
09/25 - 09/26	LISF 2 - Syossett, Long Island, NY	Paul E
10/02 - 10/03	ESL End of Season, Reading, PA	Dale I

BASS Contest Schedule 2004
Tony Guide, Contest Director

Here is the first crack at the 2004 contest season. I do not have all the club members email address, so please pass along. Of course some dates may change due to weather conditions. The Hand Launch warm-up contest will be handled like a real contest, man on man, but no points will count toward the end of the season final score.

Bass Contest Schedule 2004

Date	Location	Type	Notes
March 27	Villa Maria	Open	
April 17	Villa Maria	Woody	
April 25	Villa Maria	Hand Launch warm-up	Does not count toward final score.
May 8	Polo Field	Open	
June 12	Polo Field	Woody	
June 26	Polo Field	Summer Solstice Fun Fly	Information TBD
July 17	Polo Field	Open	
August 28	Villa Maria	Woody	
September 18	Polo Field	Open	
October 16	Villa Maria	Woody	
November 13	Polo Field	Open	
December TBD	Villa Maria	Woody	

Note: All contest rules will be determined by CD at time of contest

Woody contest Rules:

a.. Built up wings

b.. Built up tails

MEMBERSHIP

Baltimore Area Soaring Society

2004 Membership Application

Full memberships are $30.00. Junior memberships are $12.00, and associate memberships are $18.00. If you would like to join BASS, or have not renewed, please take a moment today to write out a check and send it in along with a copy of this application. Please complete all information.
2004 promises to be another award-winning year for BASS. Be part of it!

Personal Information

NAME: _____

ADDRESS: _____

CITY: _____ STATE: ____ ZIP: _____

PHONE (WORK): _____ PHONE (HOME): _____

AMA NUMBER : _____ (Valid 2004 AMA Membership is required)

LEAGUE OF SILENT FLIGHT & LEVEL (if _____

PRIMARY RADIO FREQUENCIES USED: _____ _____ _____ _____

PRIMARY PLANES FLOWN: _____

_____

NAME OF SPOUSE OR SIGNIFICANT OTHER: _____

E-MAIL ADDRESS (IF AVAILABLE): _____

Signature: _____

In what areas of the club would you be interested in becoming involved? _____

_____

How can BASS help you? _____

_____

Please return this application with a check or money order payable to BASS.

SEND TO: Mr. Russell Bennett [redacted]

BASS EVENTS

Mar	4	7:30 PM	**BASS Meeting, Ridgley Middle School**
Mar	27		**Villa Maria, Open Contest**
Apr	1	7:30 PM	**BASS Meeting, Ridgley Middle School**
Apr	17		**Villa Maria, Woody Contest**
Apr	25		**Villa Maria Hand Launch warm-up**

BASS Meetings during the summer are held at Villa Maria, weather permitting. Otherwise, at Ridgley Middle School

From 695, North on York Road. Right on Ridgley Road (Lincoln/Mercury dealer on corner) At first light turn right on Charmuth Rd. Immediate left turn into parking lot. Ridgely Middle School, Room 123.

BASS Contests start at 10:00 AM unless otherwise noted. All skill levels are encouraged to attend. Be at the field 1 hour early to help set up contest. Fun flying after events. Spectators and

SOARING SCENE

Feb 20-22	WRAMS Show, Westchester, NY
March 7	National Building Museum
March 13	Lebanon, PA Swap Meet
May 1-2	BASS East Coast HLG Classic

*** Denotes Eastern Soaring League (ESL) sanctioned event.**

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Baltimore, MD 21236

January/February 2004

First Class Mail