



Happy New Year

From your Club Officers

Thermals

Newsletter of the Rocky Mountain Soaring Association

*Shannon, Jim, Bob, John, and
Mike*

January 2001

AMA Chartered Club 1245

Volume XXV Number 1

Vice - President's Message

Happy New Year! If you carefully examine the masthead of this publication you will see that this is Volume 25 issue number 1. That means that this is, at a minimum, the 25th anniversary of this newsletter and probably the 25th anniversary of RMSA. I'm sure there are members that can remember the establishment of the club, and some of the club highlights. How about some of you elder statesmen drop me a note telling us "newbies" about some of our history? I'll include these vignettes during the year!

It takes a lot of work to keep a club flourishing and it takes many volunteers to do the many tasks that make us successful. Many people have held the position of club officers during these 25 years, putting in countless hours. Although there are sometimes disagreements on how things are done, or should be done, the club officers do their best to run the club in the best interests of all of the members. This is a democracy, but democracy only works when everyone participates – by voting, attending meetings, and expressing your opinions. Your leadership will do what you want – when you let them know what that is. Try to attend some of the meetings this year and help us help you!

There are also a lot of volunteers that make this club go that are NOT club officers. These people rarely get the recognition they well deserve. I will take a little space here and express the gratitude of the board and the membership for these diligent people. First let's cover the winch masters. This is a thankless job that often goes overlooked. Our winchmasters are AWESOME. They attend nearly every contest on our agenda and ALWAYS make sure their winch is transported to the contests. They get there early and spend their time setting up the launch equipment. While most people are setting up their planes and transmitters and having a nice talk with their friends, these folks are hurrying to get the launch equipment set up and their own stuff ready to fly. When the winds switch around – they are the main folks involved in swapping directions. Then after the contest – they are the last ones out of there. Many of these great folks are at the field on weekends and holidays allowing the rest of us to use the club equipment. They are responsible for maintaining the equipment and restringing the lines – all on their own time. I give a resounding THANKS GUYS!!! The next time you see one of them – tell them you appreciate their efforts... Thanks to **Gary Lewan, Bob Rice, Shannon Bingham, Matt Curtis and Bob Moffett...**

Now I'd like to thank the Instructors – **Jack Zika, and Mark Howard** – these guys get lots of calls from potential new members and they really do their best to get the new folks going. From construction advise, and checking out the new airplanes to teaching newcomers the basics of flight – and those of us still learning the nuances of thermalling – these guys do it all. This is how our club grows.

Next Meeting:

Date/Time: January 2, 2001 - 7:00PM

Location: Heli Port Hobbies

1400 W 70 Ave

Denver CO 80221-7023

See map in March 2000 Newsletter



Rocky Mountain Soaring Association

Finally I'd like to thank the CDs. We could not possibly have the robust schedule that we do without the support of a lot of people running the contests. "Many hands makes light work" and having a good dedicated bunch of people to run the contests really helps out. Most CDs only have to do a couple of contests a year, but some volunteer to do more. The pay is cheap – a free AMA membership – for the amount of work they do. These guys do their best to run a bunch of fun and competitive contests for the membership enjoyment. We can always use more CDs. The requirements are not very rigorous – an open book test of about 10 questions from the AMA rulebook and having been a member for 3 years. Please consider helping out by applying for a CD certification from AMA and running at least one contest a year. We will be having a CD meeting this month to set the schedule for next year. We will try to get all the paperwork out of the way at the meeting, as well as getting all the awards bought and paid for prior to the contest season. I'd like to thank last years CDs and hope they continue to support the club this year. Thanks go out to: **Lenny Keer, Jim Monaco, Jim Barr, Shannon Bingham, Mark Howard, Bob Pederson, Skip Miller, Bob Rice, Bob Lewan, and Dr. Dan Williams.**

We can also use some unofficial CDs to help out with funflvs or non-sanctioned contests like RES and HL. If you would like to help out by running a funfly or other type of contest – please come to the January meeting so we can put it on the schedule.

I'm looking forward to a great 2001 (the REAL new millennium).

Jim

2001 Contest Program Discussion

The meeting to determine the contest schedule and to discuss the club contest guidelines will be held during the January regular meeting. We will be setting the contest schedule, so if there are dates for other national contests that you would like us to consider avoiding for our contests, please bring those with you. This meeting is particularly important for CDs so we can get commitment on who will run which contests next year. All members that compete are encouraged to participate as we will be discussing the current competition guidelines, attempting to clarify which outside contests count for seasons points, how scoring for the Challenge Cup is applied to the RMSA year end points and other less than clear provisions. If you have opinions on any of the current guidelines please come prepared to discuss them. We will be filling out the sanction sheets during the meeting so that we can have the treasurer write out a single check for all of our sanctions and avoid the late sanction problems we had this year. We will also prepare the order forms for the awards for all of the regular club contests so that CDs do not have to deal with that issue in preparing for contests. CDs will be given their awards prior to their contest. This is a very important meeting so please plan on attending. Because I hope for and expect a large turnout for this meeting we will hold it at the same place we have been – Buzz's Heliport Hobbies. Later in the newsletter is the text of the current RMSA Contest Guidelines. Please print a copy and bring any suggestions to the meeting.

2000 RMSA Banquet

About 35 members attended the annual RMSA awards banquet this year. It was held at Cinzetti's Italian Marketplace in Thornton. The food and service was excellent with most folks needing to head home for a nap afterwards. We held the annual elections at the banquet this year and the previous slate of board members will continue in their current positions. Shannon is the President, Jim Monaco is the VP, Bob Rice is the Secretary and John Pearson is the Treasurer. Awards were given for year end standings. The following members received awards for Open Class Masters Division:

1. Miller Skip,
2. Howard Mark
3. Miller Dusty
4. Lewan Bob
5. Miller Charlie

The following members received awards for Open Class Sportsman Division:

1. Lewan Gary
2. Jones Phil
3. Bob Johnston

The following members received awards for Open Class Sportsman Division:

1. Dr. Dan Williams
2. Curtis Matt
3. Art Ries



Rocky Mountain Soaring Association

Congratulations to all the winners! The scores were very close which shows the high level of competition in this club. The complete final standings are on the following pages.

RMSA 2000 Final Open Standings

Name	Mar	PI	Apr	PI	May	PI	F3B	PI	June	PI	July	PI	July	PI	Aug	PI	Aug	PI	Sep	PI	Oct	PI	PPSS	PI	Nat.	PI	Best	Place	Prev	Prev	00	00	To	Total	Promo		
Masters																																					
Miller Skip	1000	1	997	3	996	3	1000	1	981	4	1000	1			1000	1			1000	1	1000	1					6000	1									
Howard Mark	932	7	816	9	981	6		888	1000	1	997	3	1000	1		953	2	869	7	846	14	1000	1				5931	2									
Miller Dusty	995	2	952	5	983	5	958	2	987	3					998	3					925	10			995		5916	3									
Lewan Bob	914	10	946	6	758	14	803	4	931	6	1000	1	683	5	999	2	895	3	983	2	994	3					5853	4									
Miller Charlie	977	3	749	12	994	4			921	7	964	6			882	5					980	3	985	5			5821	5									
Keer Lenny	860	12	999	2	922	9		910	877	10	992	4	844	2	922	4	1000	1	898	6	911	11			927		5762	6									
Blakeslee Byron	958	4	958	4	1000	1			892	8	981	5			785	7					820	8	895	13			5684	7									
Zika Jack	764	13	654	14	966	7			997	2	909	9	687	4	211	10	758	5	924	4	966	7					5526	9									
Shannon Bingham			1000	1			741	5	935	5	935	7									782	10	995	2	951		5598	8									
Don Ingram	950	5	815	10	892	11			890	9	875	10			773	8					729	11	961	9			5383	10									
Bob Moffett	945	6	764	11	866	12			848	11	910	8	804	3	823	6	830	4	794	9	911	11					5310	11									
Monaco Jim	929	8	899	7	938	8	491	6	557	13					578	9								870		5180	12										
Padilla John	917	9			997	2	868	3	794	12																	3576	13									
Rice Bob	586	14	718	13	840	13																					2844	14									
Phil Jones																	340	6	917	5	992	4					2249	15									
Barr Jim	885	11	630	15																							1515	16									
Pederson Bob			550	16	913	10																					1463	17									
Gressman Tom																						976	6				976	18									
Douglas Bob			852	8																							852	19									
Sheldon Matt											810	11															810	20									
Sportsman																																					
Lewan Gary	745	2	972	2	1000	1			790	5	993	2	1000	1	621	3	870	2	1000	1	983	2					5948	1	4			20	3	24	3	P	
Jones Phil	1000	1	1000	1	961	3			980	2	1000	1															4941	2	3	1	12	3	15	4	P		
Bob Johnston			501	4	980	2			797	4	596	4			617	4					717	3	1000	1	672		4783	3			6	1	6	1			
Kevin Moffett	742	3			802	4			1000	1	767	3	918	2													4229	4			7	1	7	1			
Kappus John									906	3					932	2	1000	1	949	2							3787	6	5	1	8	1	13	2			
Monaco Marc	687	4	416	5	735	5	424								1000	1					547	3				3809	5	2		4	1	6	1				
Matt Curtis											573	5			295	5	551	3									1419	7	3	1	1		4	1			
Bob Hatch	581	5	521	3																							1102	8	5	1	1		6	1			
Rick Housden	470	6																									470	9									
Jack Oliphant			293	6																							293	10									
NOVICE																																					
Dr. Dan Williams	500														1000		914		1000		1000	1					4414	1			3	1	3	1			
Curtis Matt	1000		1000		729				1000																		3729	2	3				3				
Art Ries															1000						241	3					1241	3	6	2	1		7	2			
Joey Wertz					1000																						1000	4									
Ali GhaFari																						715	2				715	5	8	1	2		10	1			
Wayne Hollenbeck																											539	6	8	1			8	1			

RMSA 2000 Final Handlaunch Standings

Name	April	May	June	Aug	Total	Best 3	Place
Miller Skip	1000	994	979	1000	3973	2994	1
Kappus, John		1000	1000	944	2944	2944	2
Keer Lenny	880	875	794	895	3444	2650	3



Rocky Mountain Soaring Association

Name	April	May	June	Aug	Total	Best 3	Place
Miller Charlie	887	896	708	700	3191	2491	4
Zika Jack	797	859	725	817	3198	2473	5
Lewan Bob	744	882	750	781	3157	2413	6
Miller Dusty		957	864		1821	1821	7
Bingham Shannon	958			796	1754	1754	8
Gressman Tom			808	901	1709	1709	9
Burg Jeff	839			853	1692	1692	10
Byron Blakeslee	817			435	1252	1252	11
Lewan, Gary	597	69		117	783	783	12
Padilla, Jon		737			737	737	13
Joe Newcomb		266	319		585	585	14
Cheshire Randy		291			291	291	15

Current RMSA Contest Guidelines

PURPOSE

1. To help members develop flying skills by competing against an equally skilled group.
2. To allow advancement to a higher level skill group.
3. To challenge all members to develop their design, building, and flying skills.

RMSA CONTESTS

RMSA usually schedules at least one contest per month, March through November. Tasks are chosen to provide variety and challenge for all skill levels. At the beginning of each year, the Board of Directors normally obtains AMA sanctions for nine regular monthly contests to be counted toward season points. The Board or individual contest directors may from time to time also request or schedule additional specialty contests. All AMA/RMSA sanctioned contests will count toward season point totals and awards. Specialty contests, fun flies, etc. are non-sanctioned and thus non-point events.

NON-RMSA CONTESTS

The Colorado Challenge Cup is normally held in August or September and sanctioned by the club holding the cup for the year and is a counting event regardless of the club holding the event.

To encourage AMA members to participate in national level competitions, any national contest spanning two or more days with 30 or more contestants may be counted towards season total points.

To encourage reciprocity with the Pikes Peak Soaring Society (PPSS) ONE PPSS contest may also be used for season points.

Contests must be of a class compatible with the RMSA class they will be counted against, e.g. Open Thermal Duration (including F3J and F3B) for the RMSA Open class, or HLG for the RMSA HLG title.

NO MORE THAN TWO NON-RMSA CONTESTS CAN BE COUNTED TOWARDS SEASON POINTS TOTALS!! This is a total for BOTH HLG and Open class.

CLASSES

- Novice** New members with limited flying experience. Novice pilots are limited to Rudder-Elevator-Spoiler sailplanes. Pilots flying full-house sailplanes are automatically promoted to Sportsman.
- Sportsman** Members with contest experience and have advanced by contest points.
- Master** Member having advanced through contest achievement from other classes.

New Member Classification

At AMA/RMSA contests, all members are expected to identify themselves as novice, sportsman or masters pilots based on the above guidelines. New members should elect to place themselves in the Sportsman class if they are accomplished RC pilots (power or glider)



Rocky Mountain Soaring Association

or have had significant prior contest experience. The Novice class is intended to encourage new flyers to enter the club contests. New members with vast contest experience may petition the Board to be placed directly into the Master class.

Reclassification

Members may petition the board for consideration of changing classification either up or down based on extenuating circumstances. The board will examine the merits of the petition and make a recommendation based on fairness to the member and other competitors.

ADVANCEMENT

Class points are given as follows;

1st place in class = 3 points

2nd place in class = 2 points

3rd place in class = 1 point

Advancement to the next class requires the following:

1. Novice to Sportsman = 12 points and 1 class win or 3 class wins.
2. Sportsman to Master = 21 points and 2 class wins or 4 class wins.

In all cases there must be at least three competitors in your class to be counted towards advancement points. No class points are carried forward at advancement, however class points are carried forward to the next contest year.

STANDINGS

Normalized scores from each contest will be used to develop advancement points and annual awards. Annual awards shall be given through third place in each class. Only the six best Open contests are counted towards annual Open points. For Handlaunch only the best 3 contests are counted. In addition only two of the special noted contests may be counted toward the six best (including one contest hosted by the Pikes Peak Soaring Society).

The RMSA club champion shall be recognized as a true champion pilot, showing both skills as a pilot and the willingness to compete against his peers inside and outside of RMSA. Points for the club champion trophy shall be computed from the total of the normalized, documented scores from all AMA sanctioned contests entered during the year by that competitor. Normalized points from outside contests must be documented, signed by the contest director, and submitted to the club scorekeeper prior to November 15 for that contest year. Annual awards shall be given in the class where the pilot spent most of the year. Example: If the pilot advances from Sportsman to Master by virtue of contest points during mid-year, he/she will be eligible for an award only in the class where he/she spent the majority of that year's club contests. In the event of a tie for any standings, co-champions will be declared.

Receiver Battery Low Voltage Alarm III

Quite possibly the ultimate low voltage alarm for R/C gliders, this new design of mine is extremely light and uses very little power. All up weight with a two-inch wire pigtail is 0.07oz (2gm). When quiet, this circuit uses minimal power (less than 0.01 mA), and uses about 2mA when sounding. The design uses a total of five parts, requiring four solder joints, and NO CIRCUIT BOARD (you could make one, but it would be way overkill).

Design notes: This design uses an integrated circuit (IC) mounted in a package that looks like a regular small signal transistor, a plastic "TO-92" case. The IC has a precision tuned voltage reference, voltage divider resistors, a comparator, and an output driver that can sink 50mA. This product was designed to monitor the voltage of an onboard battery, such as those of cordless phone handsets, or to monitor the supply voltage of a microprocessor. The hysteresis built into the chip means that the circuit turns on (ON in the table below) at a lower voltage than it turns off (OFF in the table below), typically a 0.05 volt difference for this particular IC, but the extra components I've added here expand the hysteresis to about 0.2 volts.

This circuit was originally set up for a three cell receiver battery pack in my Spectre HLG that at the moment has four HS-50 servos, a Hitec 555 receiver, and uses 110mA three cell battery packs. With this configuration, the battery voltage dips a bit every time the servos move (and even more so with smaller capacity batteries), so the alarm would go off every time the servos moved if there were no filter capacitor (C1) added. The IC has an extremely fast response rate, so the resistor divider and the capacitor were needed to make the response rate very slow--on the order of a half second. If the alarm is on more than it is off, either I've been stirring the sticks like mad, or it's time for a fresh battery.

Options: The resistors divide the battery voltage and provide a test voltage to the IC. The table below gives other values for R1 and R2 that would be appropriate for a several battery pack cell counts and plane types. For hand launch gliders (HLG), the flying is close by with small capacity packs, and I want to use the very last few electrons from the pack, so the alarm sounds at a lower voltage (ON voltage below) at about 1.1 volts/cell, within 1-2 minutes of the pack being completely dead. With slope or thermal duration ships, I'd like a little more warning, so the alarm voltage threshold is higher at about 1.15 volts/cell.



Rocky Mountain Soaring Association

The capacitor filters out the bumps in the voltage level. With smaller capacity batteries, the voltage drops more with servo motion than it does with larger capacity batteries, so the capacitor needs to be a little larger with a smaller capacity pack. Also, more filtering out the bumps with a larger capacitor means that the alarm sounds further along in the discharge cycle of the battery. If you find that the alarm sounds with every servo motion even with a generous charge left on the battery, try increasing the value of the capacitor a bit (you can solder another one in parallel alongside the first). The table below gives sample values for each application, but you may like to adjust some for your particular plane and tastes.

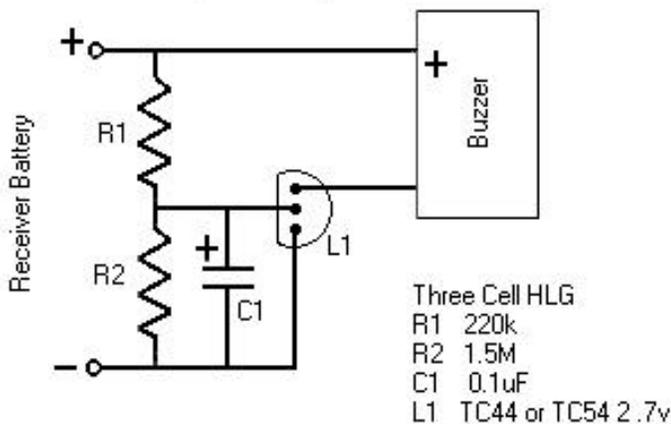
The piezo buzzer is a self-contained device that features a tiny driver circuit already inside the device. The smaller of the two listed below and available at RadioShack is tiny and light, but not very loud. For TD or slope ships, I recommend a larger buzzer, like the second RadioShack unit below.

Building: Wrap together the leads of C1 and R2, then one side of R1 as shown in the pictures. Then add the leads of L1. I used a short length of heat shrink tubing over the middle lead of L1, but a short length of insulation stripped from a bit of servo wire will fit over the lead also. After a test fit on the buzzer, solder the leads together off the buzzer. Wrap L1 and R1 leads to the posts of the buzzer, being sure to get the polarity of the buzzer right. Solder the buzzer leads. Add and solder the connector leads. I wrapped the thing with some clear shrink tubing as a final cover, but some tape will work. If you are using this with a 5 channel receiver and 4 servos, you will need to rig some kind of Y-connector as in the pictures below.

Installing: Solder on a battery connector or servo connector with positive and negative as shown, and plug the connector into an unused slot in your receiver. In my Spectre HLG, I used a piece of double sided (carpet) tape to fix it to the inside of the fuse pod directly over a tiny hole in the side of the fuse to maximize the sound reaching the outside. I've found that gluing the unit, facing down, to the inside of the fuse under the rear wing mount over an appropriately sized hole in the fuse works great and is out of the way for TD or slope ships.

Testing: You definitely need to test this gizmo with your particular ship, partly to make sure everything is connected properly, but also to imprint your mind with the sound it makes. With a HLG, I usually fly the battery to the end every time I fly the plane, so I am listening for the alarm. On my slope and TD ships though, it is extremely rare to get to the very dregs of the battery—either the battery was not charged properly, or the battery is no longer functioning properly. I end up flying R/C a couple times a week, but such a "battery empty" event is so rare with slope and TD ships that when it happens and the alarm goes off, I find myself thinking, "What the \$%&* is that noise?" rather than thinking "I've got to land this thing RIGHT NOW," or "Time to charge before I launch again." So far, I've salvaged two full house TD ships with this sort of alarm (faulty batteries), but could not figure out in the wind and cold why my slope ship was suddenly making such a racket (forgot to charge) before I lost control and watched it crash. Install the device in your plane, then run down the battery by twiddling the sticks, and see how the system behaves. You will probably run down your battery much faster this way by stirring the sticks than you would ordinarily, and can expect to see the alarm going off with maybe a third or less of the time you would expect to be able to fly, unless you just twitch the sticks now and then like you would when you are actually flying your plane. If you have a voltmeter attached, you will also notice that you can drive the voltage down quite a bit by continuously stirring the sticks, particularly with a six servo ship, but that the voltage will recover when the servos are not moving. In the field then, you can do a quick sort of battery check before you launch just by stirring the sticks a few times, thus putting a load on the system and observing the result.

Receiver Battery Low Voltage Alarm III



Rob Crockett 11/2000



Rocky Mountain Soaring Association





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As described above, here are the values for several battery pack cell counts and applications: hand launch glider (HLG), thermal duration (TD), and slope.

Component	Three Cell HLG	Four Cell HLG	Four Cell TD/Slope	Five Cell TD/Slope
R1 ohms	220k	510k	560k	560k
R2 ohms	1.5M	1.0M	1.0M	560k
C1	0.1uF	0.047uF	0.1uF	0.1uF
ON volts	3.30	4.43	4.58	5.75
OFF volts	3.45	4.65	4.83	6.08

Digikey (1-800-344-4539) part numbers: Digikey does sell the peizo buzzers, but they are much more expensive than those at Radio Shack and are larger as well. There are several manufactures of the voltage dectectors in the Digikey catalog and each offers at least several voltage ranges--this one happened to be the voltage I needed. In addition to shipping, there is a \$5 processing charge if your order is less than \$25. Tantalum capacitors are physically smaller, but any composition will work. The tantalum capacitors are polarized—at the small voltages used here the polarity probably does not matter, but if you think of it, solder it in with the “+” in the direction outlined in the drawing above. The 1/8 watt resistors were the smallest I could find without going to a surface mount type resistor, but any power rating will work as the current involved is extremely small.

Part Number	Price	Description
158-1083-ND	\$1.19	TelCom voltage Detector 2.7 volt N-channel open drain T0-92
P2053-ND	\$0.35	0.1uF tantalum capacitor 35 volt 10%
P4955-ND	\$0.49	0.047uF ceramic capacitor 50 volt 10%
220KEBK-ND	\$0.28/5	220k 1/8 watt 5% carbon film resistors
1.5MEBK-ND	\$0.28/5	1.5M 1/8 watt 5% carbon film resistors
510KEBK-ND	\$0.28/5	510k 1/8 watt 5% carbon film resistors
1.0MEBK-ND	\$0.28/5	1M 1/8 watt 5% carbon film resistors
560KEBK-ND	\$0.28/5	560k 1/8 watt 5% carbon film resistors

Radio Shack (1-800-843-7422) parts: You can visit your local store, call, or order on the web.

Part Number	Price	Description
273-074	\$2.99	Miniature Piezo Buzzer, 3-12v, PC board mount
273-065	\$2.99	Larger and louder Piezo Buzzer, 3-12v PC board mount

Thanks to Rob Crockett

<http://www.ncws.com/rcrock/lowbat3.htm>



Rocky Mountain Soaring Association

2001 RMSA Contest/Event Calendar

Date	Event	CD	Notes
Jan. 2	RMSA Meeting		
Feb. 6	RMSA Meeting		
<i>Feb 2-4</i>	<i>Southwest Classic</i>		<i>CASL Southwest Classic - Phoenix AZ</i>
Mar. 6	RMSA Meeting		
Mar. 11	Open*		
Mar. 18	Pro-Am	Jim Monaco	Fourth annual Pro-Am
Apr. 3	RMSA Meeting		
Apr. 8	Open*		
Apr. 17	HLG**		
May 1	RMSA Meeting		
May 6	Open*		
May 13	HLG**		Saturday event
<i>June 2-3</i>	<i>IHLG</i>		<i>International HL Contest Torrey Pines CA</i>
June 5	RMSA Meeting		
June 10	Open*		
June 17	HLG**		Saturday event
July 3	RMSA Meeting		
July 8	Open*		
Aug. 7	RMSA Meeting		
Aug. 12	Open*		Kinda-F3J
Aug 19	HLG**		
Aug. 26	2M*		Restricted to 2 meter models
Sept. 4	RMSA Meeting		
Sept. 9	Open*		AKA: Colorado Challenge Cup
Oct. 2	RMSA Meeting		
<i>Oct 6&7</i>	<i>Visalia</i>		<i>Visalia California</i>
Oct. 14	Open*		
Nov. 6	RMSA Meeting		
Nov. 11	Open*		
Dec. 9	Awards Banquet		

*Club Open points contest ** Club HLG points contest † RES Triad Points
 Italics indicates major national level contests available for points and PPSS events



2000 Board Members

President:	Shannon Bingham	(303) 499-2314	binghams@boulder.earthnet.net
Vice President:	Jim Monaco	(303) 464-9895	j.m.monaco@worldnet.att.net
Secretary:	Bob Rice	(303) 745-5269	bob.rice@tobin.com
Treasurer:	John Pearson	(303) 306-6800	jp7120@aol.com
Past President:	Mike O'Hearn	(303) 693-6925	m.o.hearn@worldnet.att.net

Member Support
<http://rmsa.aomlead.com>
 Chief

Instructor:	Jack Zika	(303) 279-1549	(303) 505-9488 (Pager)
Instructor:	Mark Howard	(303) 278-7519	Mhoward@spaceimaging.com
F3B/F3J:	Mark Howard	(303) 278-7519	Mhoward@spaceimaging.com
Librarian:	Tracy Cochran	(303) 934-8838	Tcochran@idcomm.com
Newsletter:	Jim Monaco	(303) 464-9895	j.m.monaco@worldnet.att.net

Winch Masters

Bob Rice	(303) 745-5629	Bob.rice@tobin.com
Bob Moffett	(303) 426-0328	Rtm0007@aol.com
Shannon Bingham	(303) 499-2314	binghams@boulder.earthnet.net
Gary Lewan	(303) 277-1375	
Matt Curtis	(303) 698-4376	



Directions to Field

Take I-76 to exit 16. Turn left and follow the frontage road through the circle onto 120th eastbound towards the airport. Take 120th East to Tower Rd. Continue straight through traffic light and look for the sod sprinkler on the left. We are on the southwest corner of that part of the sod farm.

Flying for RMSA members and accompanied guests only.



Rocky Mountain Soaring Association
 1123 S. Oakland St
 Aurora CO 80012

First Class Mail

Forwarding Address Requested