



# Thermals

Newsletter of the Rocky Mountain Soaring Association

June 2002

AMA Chartered Club 1245

Volume XXVI Number 6

## President's Message

Well the F3J in the Rockies is now in the history books and everyone had a great time there. It was two great days of flying both days were good weather and the first day there was lift everywhere now the second day was a different story and everyone had to work to get there times. Next year we are looking into making this event a Soaring Festival format. Next Month I will be hosting a BBQ and Fun Fly. There will be a few fun events first will be the Zagi fun with Limbo, bowling, and a few other things, also a Pylon race for the Zagi's and the Wedgie's. and a few Thermal events that will be fun, So come on out and enjoy. On a more serious note we have had our first complaint from the house's and it was about urination visible to the people in the houses so we are going to do something about this or lose the field. This is a serious matter as we could get kicked off the field with this one, Also we have now been told not to park in the dirt next to the flying field and must stay on the asphalt parking area. we have a great month of flying to look forward to so lets go out and enjoy.

There are no programs planed for this month! Meeting (my fault, way too busy sorry). Next month we will have something good to see...

See you at the field *Dr. Dan Williams*

### Next Meeting:

Date/Time: June 4, 2002 – 7:00 PM

Location: Broomfield Advanced Chiropractic  
26 Garden Ctr  
Broomfield CO 80020-7012

Program: None

**Summer Fun – June Open Contest**  
**Sunday June 9, 2002**  
**CD Bob Moffett**

**Registration:** 8:30-9:00AM  
**Pilot's Meeting:** 9:00AM  
**First Round:** 9:30AM  
**Entry Fee:** \$5.00 (\$3.00 Jrs)

Please be registered and have planes assembled by Pilot's Meeting

**Winchmasters: Please be at the field by 8:30AM. Please notify the CD if you are unable to attend.**

**Tasks:** T1- International Duration  
**Landing:** Spot Landing with AMA tapes.

**June HLG Contest**  
**Saturday June 15, 2002**  
**CD Shannon Bingham**

**Registration:** 9:45AM  
**Pilot's Meeting:** 10:00AM  
**First Round:** 10:30AM  
**Entry Fee:** \$5.00 (\$3.00 Jrs)

I'll be running (or ruining) depending upon your perspective, the June hand launch contest. I'll run day one of the International Hand Launch Glider Festival tasks. Entry fee will be five dollars and we will divvy the entry fees up as prize money unless the club directs me do to otherwise. I'll have my recorded timing system. Usual AMA and Handlaunch protocols will apply. If you hit anyone with your glider, you get a zero for the round, etc. You will find me to be a little anal about safety on discus launches if people get a little too frantic. I will have a highest javelin launch award for anyone who exclusively avoids discus launching.

## Electric F5J Contest Sunday May 19, 2002

**Date:** Saturday, June 29, 2002

**Time:** 8:30 registration, 9:00 pilots meeting

**Type:** Electric thermal soaring

**Entry fee:** \$5 per class entered (includes electric raffle ticket)

**Note – *this is now a ONE day event rather than the previously anticipated 2 day event.***

**Classes:** Two classes will be flown. Pilots may enter one or both classes.

Sp400 Class – for stock speed 400 motors only and up to 8-cell battery.

7 cell/open Class – for any motor and cell count. (7-cell models limited to 7 cells)

**Motor runs:** Sp400 class will have 60-second motor run time.

7 cell models will have 40-second motor run time.

Open class models will have 20-second motor run time.

**Task:** The task is to climb to altitude in the allotted motor run time, and remain aloft for a total of 10 minutes. Each flight group will be scored together, man on man.

**Landing:** FAI landing tapes will be used, 5 points per meter.

**Raffle:** We will have a separate raffle of electric related items at the December awards banquet. Raffle tickets will not be offered for sale; you'll have to enter the F5J contests to receive them. Each paid entry will receive one ticket. The top three places in each class will receive an additional ticket. Attendance at the banquet won't be necessary to win.

**Awards:** In addition to the extra raffle ticket, we'll have some simple awards for the first three places in each class.

## RMSA Family BBQ and Fun Fly Sunday June 23, 2002 CD – Dr. Danny Williams

Lots of fun events are planned including Zagi/Wedgie events such as Limbo and Pylon racing. We may do a tennis tournament ladder man on man event during the day. Jim Monaco is working on some rules, but it will likely be 2 men at a time from histarts. Last man down wins, unless both flyers are in the air at 7 minutes, in which case an AMA spot landing at exactly 8 minutes will break the tie. Winner moves to the winner bracket and loser moves to the loser bracket. 2 losses and you are out. \$5/person to play top 2 places split the purse 60/40.

## May Club Contest CD's Report – Don Ingram

### May 5<sup>th</sup>, 2002

First I would like to thank all the winch masters and everyone who helped me run the contest. A special thanks to Jim Monaco for all his help before, during and after the contest.

We had a good turnout with a total of twenty-eight pilots; 21 masters, 5 sportsman and 2 novices. This included pilots from the Pikes Peak Soaring Association and a special guest, Jack Strother, President of the League of Silent Flight.

I arrived at the field at 7:45 to find the wind blowing out of the southwest at 7 to 10 miles per hour. I had heard a report that the wind could blow out of the northeast later in the day. I decided to set the winches southwest knowing that we may have to switch them 180 degrees. The contest started at 9:30 after the pilots meeting. In the middle of the second round the wind shifted to the northeast, as anticipated. There was a growing concern for the safety of the pilots, timers and retrievers because the pilots were forced by the wind shift to make the final approach over the winches. I decided to switch the winch lines 180 degrees. All went well after that, the wind stayed out of the north to northeast. We successfully completed four rounds of F3J competition. Time constraints limited us to four rounds, not the anticipated five. Competition was stiff. We had one mid-air collision, but both pilots survived to finish the round. In round four, Joseph Newcomb was able to fly downwind almost out of sight and return to win the round. Congratulations, Joseph!! Nice Flight. (*Ed. Note: an unnamed competitor landed 835 "jimsteps" south of the field – did you know there is a road down there???*)

Congratulations to John Kappus for winning the Master's Class with a plane he designed and built. I can only imagine what a thrill that must have been.

Congratulations to Mike Verzuh for winning the Sportsman's Class. It should be noted that Mike had most overall points in the contest.. (See you in Master's pretty soon, Mike!)

Congratulations to Neil Schmoker for being the winning Novice. Nice job, Neil.

After the competition, the top six pilots were chosen for a fun fly-off. These were Skip Miller, Jack Strother, Bob Lewan, Don Ingram, John Kappus and Mike Verzuh. As usual, our Club Champion, Skip Miller, won the final fifteen minute fly-off. Way to go, Skip!!!

Many thanks to all who came. If you like this format, let's do it again next year. See contest results below.

***Don Ingram***

May Contest Results

ID	Class	Name	RD 1	RD 2	RD 3	RD 4	Total	Norm by Contest	Norm by Class
	<b>M</b>	<b>Master</b>							
6	M	John Kappus	1000	675	1000	1000	3675	958	1000
14	M	Skip Miller	1000	1000	1000	617	3617	943	984
5	M	Jack Strother	1000	894	1000	679	3573	931	972
26	M	Don Ingram	723	991	1000	834	3549	925	966
22	M	Bob Lewan	660	1000	823	994	3477	907	946
21	M	Bob Moffett	771	793	902	987	3453	900	940
11	M	Byron Blakeslee	541	991	986	923	3440	897	936
23	M	Charlie Miller	796	975	662	1000	3433	895	934
18	M	Phil Jones	854	779	627	1000	3260	850	887
24	M	Mark Howard	504	980	767	990	3241	845	882
27	M	Shannon Bingham	858	984	601	684	3127	815	851
12	M	Lenny Keer	473	929	1000	662	3063	799	834
4	M	Dr. Dan	829	873	565	667	2934	765	798
2	M	Rich O'Connell	976	1000	303	584	2863	746	779
3	M	Bob Vixie	337	1000	764	724	2826	737	769
8	M	Jack Zika	739	732	300	1000	2770	722	754
9	M	Jim Monaco	890	852	962		2704	705	736
13	M	Dusty Miller	1000	984			1984	517	540
1	M	Gary Lewan	606	259	259	836	1961	511	534
17	M	Bob Johnston							
	<b>S</b>	<b>Sportsman</b>							
10	S	Mike Verzuh	970	888	983	996	3836	1000	1000
15	S	Joe Newcomb	509	1000	711	1000	3220	840	840
25	S	Ali Ghaffari	1000	827	195	907	2929	764	764
20	S	Chuck Stasek	585	857	414	922	2778	724	724
16	S	Jeff Hainline	1000	208	439	344	1991	519	519
19	S	Steve Bygren	818	463	194	401	1875	489	489
	<b>N</b>	<b>Novice</b>							
7	N	Neil Schmoker	670	270	172	175	1287	336	1000
28	N	Art Reis	64	147	231		442	115	344

## Treasurer's Report as of 5/23/02

Savings.....\$659.03  
 Checking..... \$244.31  
 Cash.....\$206.47

Total.....\$1109.81

Batteries and awards have depleted the checking account this year. Hopefully the up coming contests fees will help to boost the balance in the checking account.

*John Pearson.*

## May F5J Contest Report

### Lenny Keer – CD

We had the second F5J contest of our series on Sunday, May 19<sup>th</sup>. The weather was quite good this time. It was a little windy in the morning, and gradually improved throughout the day. By mid morning, the thermals were pretty active, but moving downwind quicker than we'd like.

Participation was about the same as the last F5J contest. A few competitors were unable to make it this time, but a few new faces showed up to take their place. Interest in electric soaring continues to grow, with many club members now having at least one electric sailplane in their hangar.

The SP400 class was very interesting, with most pilots having fairly competitive setups. The rounds were usually determined by who worked the thermals to best advantage. I think it's noteworthy that 7 out of the 9 pilots who flew the SP400 class had at least one 1000 point round. I took first place with an Omega 1.5. Second place went to Bob Pederson, flying an Omega 1.8. Leon Kincaid came up from Colorado Springs and took third place with his own scratch built design.

Open class F5J is where the real excitement is. The simultaneous launch of these snarling beasts at the start of each round has all the flavor of an F3J contest, with no tow lines to tangle. Many of the flight groups maxed the 10-minute slot time, with the winner being determined in those last few seconds of the round. Again, the essence of F3J is captured as the planes slide up to the landing tape just under the buzzer! Mark Howard used his Aveox powered Ellipsoid to take first in open class with a perfect 4000 points. Jim Monaco was very competitive with a budget powered Swing Plus (See details in March newsletter). Although it had an impressive climb, this plane was a little disadvantaged by the wind. His consistency earned him a second place finish. I took third place with my Hacker powered Escape. My speed controller failed on the last launch, and the freewheeling 18" prop precluded any thoughts of thermaling out. Bob Johnson had the misfortune of "landing" off field in the first round for a zero score. Since he wasn't able to fly the remaining rounds, he pretty much had last place all sewn up.

There's plenty of F5J competition still to come this year. The Albuquerque club will be hosting a two-day F5J contest on **June 22<sup>nd</sup>** and **23<sup>rd</sup>**. We'll be having two more contests in Denver on **June 29<sup>th</sup>** and **Sept. 14<sup>th</sup>**. The prestigious Phoenix F5J event will be held **October 26<sup>th</sup>** and **27<sup>th</sup>**. Scores from either the Albuquerque and Phoenix contests (assuming they draw at least 20 competitors) can be used as an out of town score in the RMSA F5J series.

## May 19<sup>th</sup> F5J Contest

Name	Place by Class	RD 1	RD 2	RD 3	RD 4	Total	Norm by Class
<b>Speed 400</b>							
<b>Lenny Keer</b>	1	866	758	1000	1000	3624	1000
<b>Bob Pederson</b>	2	1000	877	556	959	3391	936
<b>Leon Kincaid</b>	3	633	1000	877	667	3177	877
<b>Ali Ghaffari</b>	4	546	614	910	1000	3070	847
<b>Jeff Burg</b>	5	733	944	482	887	3047	841
<b>Shannon Bingham</b>	6	613	467	1000	620	2701	745
<b>Jim Monaco</b>	7	652	635	640	651	2577	711
<b>Mark Howard</b>	8	1000	701		480	2182	602
<b>Bob Johnson</b>	9	375	1000	11	240	1625	449
<b>Open</b>							
<b>Mark Howard</b>	1	1000	1000	1000	1000	4000	1000
<b>Jim Monaco</b>	2	925	749	658	965	3296	824
<b>Lenny Keer</b>	3	1000	1000	994	283	3277	819
<b>Ali Ghaffari</b>	4	703	335	991	1000	3029	757
<b>Jeff Burg</b>	5		904	1000		1904	476
<b>Leon Kincaid</b>	6		401			401	100
<b>Bob Johnson</b>	7						0

# E-Soaring

## How much Power?

One of the biggest questions that most people face when contemplating an electric sailplane is how much power is required for good performance. We've all seen those ARF electric sailplanes that are usually marketed to beginners. With their heavy battery pack and cheap motor turning a direct drive prop, they stagger into the air and struggle to get to winch altitude before depleting the battery pack.

This old stereotype is rapidly being replaced by better designs that offer real performance. Whether you want a competition unlimited F5J ship that rockets to altitude in a matter of seconds, or a modestly powered floater for lazy thermal soaring without dragging out the high start, the key to a successful design is matching the right amount of power to your needs.

Before we can talk about power, we need a way to describe it. In automobiles, power is measured in **horsepower**. For electric motors, the power is measured in **watts**. One watt is equal to one volt times one amp of current. When a battery is under load, each cell will have a voltage near one volt, so to simplify things, we can say that watts is equal to the number of cells in the battery pack times the amps of current used. A motor pulling 30 amps on a 7-cell pack would be using 210 watts of power. Note that this is a very simplified way of looking at this, but the information is still worthwhile. Astro Flight makes a very useful device called a Watt-Meter that measures amps and also measures watts directly.

In order to relate the amount of power to a particular plane, we need more information. While there are many different variables in power systems, and sailplane specifications, a simple but useful comparison can be made between the **watts of power** used and the **weight of the sailplane**. To follow accepted convention, the sailplane's weight is converted to pounds, so the measure of power for the plane is given in **watts per pound**.

A **SP400 class F5J** plane will typically use 8 cells and draw about 12 amps of current. This is 96 watts of power. A typical weight for this 60"-70" plane would be about 24 ounces, or 1.5 pounds. A few keystrokes on the calculator shows that this is 96 watts / 1.5 pounds, or **64 watts per pound**. This is enough power to climb to winch altitude in about 30 seconds.

A plane using a SP500 size motor might also use 8 cells, but draw 24 amps of current, and weigh 48 ounces (3 pounds). 8 cells x 24 amps / 3 pounds = **64 watts per pound**. This hypothetical plane would have performance similar to the SP400 plane above. This would be fine for sport flying, but would not be competitive for F5J.

A plane flying in the **7 cell F5J** class should have about **80-100 watts per pound** to be competitive. Lets look at the Swing Plus detailed in the March newsletter. It's budget power system draws about 35 amps from 7 cells. The all up weight is 36 ounces, or 2.25 pounds. The power then is about **109 watts per pound**. This is the reason that this plane works so well. The climb to winch altitude takes about 20 seconds.

To be competitive, an **unlimited class F5J** ship should have about **160-200 watts per pound**. An example is my Escape. I'm running 14 cells at about 90 amps. The plane weighs 103 ounces, or 6.4 pounds. Cranking the numbers, this is **197 watts per pound**. At this level of performance, the climb to winch altitude takes about 10 seconds, and a vertical climb is possible.

The **watts per pound** rating of a plane will give a good indication of its performance. This is a simple way to look at it, and there are certainly other variables, but matching the desired amount of power to the weight of the plane will get you in the ball park.

$$\text{Number of cells} \times \text{amps of current} / \text{weight in pounds} = \text{Watts per pound}$$

As always, I'd be glad to offer any assistance I can in optimizing electric sailplanes.

**Lenny Keer**

**Lenny970@AOL.com**

## For Sale

### **NEW LOW PRICES!**

1. **Omega 3M** 129" RTF less rx. ~~\$495~~ \$395
2. **Multiplex Hummel** ready to fly with receiver, speed 400 with 2.3/1 gearbox, servos, battery, speed control, purple and yellow, mint condition \$250
3. **Radar kit**, speed 400, complete with battery, motor, prop, speed control \$100
4. **Butterfly speed 400 kit** with speed control, motor, battery and prop for \$100.

**Tom Gressman**

**Home 303-979-8073**

**Office 303-744-3535 X3101**

**tom@newhorizonsccu.org**

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### **NEW LOW PRICES!**

1. **Eraser (not Extreme)** 71oz. ready to fly with Multiplex Mc's in the wing and HS-85s in the fuse, 700mah battery ~~\$725.00~~ **\$650.00**
2. **Mueller Esprit**, 72 oz. Airtronics 141s, 1200mah battery, ~~\$725.00~~ **\$650.00**. Trades considered.

**Bob Lewan**

**Days 303-884-3142**

**Eves. 303-655-1649**

**rlewan@earthlink.net**

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1. **RnR Genesis** – All molded – T-Tail. White Top/Red Bottom, 118" Wingspan 4 - Airtronics 141's in wing/2 - Standard servos in fuse. Excellent condition, never crashed. \$350

**Bryan Dannettell**

**303-465-9162 Hm.**

**303-530-6227 Wk.**

[BD462@aol.com](mailto:BD462@aol.com)

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1. **Electric Eraser Xtreme Fuselage** This is a one of a kind "proof of concept" model. It's not cosmetically perfect, but it is structurally sound. Bolt on your own Xtreme wings and tail. Comparable to the Nats winning Electric Graphite model. Hitec Super Slim receiver (Airtronics or JR compatible) and two JR 241 servos already installed. Add motor and battery and you're ready to compete in F5J. With a good power setup, this plane will climb vertically to winch altitude in about 10 seconds and is an excellent thermal machine with a weight of only 85 ounces. \$200
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1. **DMA Butterfly-RTF**, built by Lenny Keer. Includes SP400 with Rondo controller, Gunther prop. 2-HS50 micros, Hitec 555 Airtronics/JR compatible receiver, 6 cell 500 Mah battery with Deans ultra connectors. Charge it and fly. A real blast to fly, very aerobatic and will ROG. Flown a lot but in very good condition, no repairs \$175
2. **GR6501 Graupner SpeedGear 480 with Graupner 3,45:1 gearbox**, 11X8 cam prop with 38MM spinner plus a spare set of 11X8 cam blades. Very little use and in perfect condition. \$60

**Jeff Burg**

**303-627-9895 HM**

**720-936-3560 Cel**

**JAB6658@aol.com**

**JefBurg@na.cokecce.com**



## 2002 RMSA Contest/Event Calendar

Date	Event	CD	Notes
<b>Jan 8</b>	<b>RMSA Meeting</b>		
<i>Jan 19</i>	<i>PPSS</i>	<i>Barry Welch</i>	<i>PPSS - Fun Fly</i>
<b>Feb 5</b>	<b>RMSA Meeting</b>		
<i>Feb 2-3</i>	<i>Southwest Classic</i>		<i>CASL Southwest Classic - Phoenix AZ</i>
<i>Feb 24</i>	<i>Snow Fly</i>	<i>Mike Fritz</i>	<i>PPSS - RES only</i>
<b>Mar 3</b>	<b>Pro-Am</b>	<b>Jim Monaco</b>	<b>Fifth annual Pro-Am</b>
<b>Mar 5</b>	<b>RMSA Meeting</b>		
<b>Mar 10</b>	<b>Open*</b>	<b>Bob Pederson</b>	
<i>Mar 23</i>	<i>March Madness</i>	<i>Joel Zellmer</i>	<i>PPSS - RES Only</i>
<b>Mar 24</b>	<b>Elec. F5J</b>	<b>Lenny Keer</b>	
<b>Apr 2</b>	<b>RMSA Meeting</b>		
<b>Apr 7</b>	<b>Open*</b>	<b>Jim Barr</b>	
<b>Apr 14</b>	<b>Pro-Am</b>	<b>Jim Monaco</b>	<b>Fifth annual Pro-Am (new rescheduled date)</b>
<i>Apr 21</i>	<i>Humps 'N Bumps</i>	<i>Dave Kurth</i>	<i>PPSS - Open</i>
<b>May 5</b>	<b>Open*</b>	<b>Don Ingram</b>	<b>NOTE THIS IS BEFORE THE MEETING DUE TO MOTHERS DAY</b>
<b>May 7</b>	<b>RMSA Meeting</b>		
<i>May 18</i>	<i>Mayfly</i>	<i>Austin Cleis</i>	<i>PPSS - Open</i>
<b>May 19</b>	<b>Elec. F5J</b>	<b>Lenny Keer</b>	
<b>May 25, 26</b>	<b>F3J in the Rockies*</b>	<b>Mark Howard</b>	<b>Special National Event</b>
<i>June 1-2</i>	<i>IHLG</i>		<i>International HL Contest Torrey Pines CA</i>
<i>June 1</i>	<i>Dech-Elec</i>	<i>Jack Dech</i>	<i>Electric Fun-Fly</i>
<b>June 4</b>	<b>RMSA Meeting</b>		
<b>June 9</b>	<b>Open*</b>	<b>Bob Moffett</b>	
<b>June 15</b>	<b>HLG**</b>	<b>Shannon Bingham</b>	<b>Saturday event</b>
<b>June 23</b>	<b>BBQ/Fun Fly</b>	<b>Dr. Dan Williams</b>	<b>Family Event</b>
<i>June 23</i>	<i>Summer Solstice</i>	<i>Chris Keller</i>	<i>PPSS - RES Only</i>
<b>June 29-30</b>	<b>Elec. F5J</b>	<b>Lenny Keer</b>	<b>Two Day Event</b>
<b>July 2</b>	<b>RMSA Meeting</b>		
<i>July 13</i>	<i>Memorial 2M</i>	<i>Dave Meyers</i>	<i>PPSS - 2 Meter RE Only</i>
<b>July 14</b>	<b>Open*</b>	<b>Jim Monaco</b>	
<i>July 20</i>	<i>Height O'the Season</i>	<i>John Read</i>	<i>PPSS - RES Only</i>
<b>July 21</b>	<b>HLG**</b>	<b>John Kappus</b>	
<b>Aug 6</b>	<b>RMSA Meeting</b>		
<i>Aug 10</i>	<i>Howling Coyote</i>	<i>Rich O'Connell</i>	<i>PPSS - Night Fly</i>
<b>Aug 11</b>	<b>Open*</b>	<b>Bob Lewan</b>	
<b>Aug 25</b>	<b>HLG**</b>	<b>John Kappus</b>	
<i>Aug 25</i>	<i>Dog Daze</i>	<i>Greg Tarcza</i>	<i>PPSS - Open</i>
<b>Sept 3</b>	<b>RMSA Meeting</b>		
<b>Sept 8</b>	<b>Open*</b>	<b>Bob Rice</b>	<b>AKA: Colorado Challenge Cup</b>
<b>Sept 14</b>	<b>Elec. F5J</b>	<b>Lenny Keer</b>	<b>Saturday event</b>
<b>Sept 21</b>	<b>HLG**</b>	<b>Shannon Bingham</b>	
<i>Sept 21</i>	<i>Soar Bash</i>	<i>Bob Avery</i>	<i>PPSS - Open</i>
<b>Sept. 29</b>	<b>LSF Day</b>	<b>Dr. Dan Williams</b>	<b>Work on LSF Tasks (Saturday)</b>
<b>Oct 1</b>	<b>RMSA Meeting</b>		
<i>Oct 5&amp;6</i>	<i>Visalia</i>		<i>Visalia California</i>
<i>Oct 5</i>	<i>Up-Chuck HLG</i>	<i>Bob Vixie</i>	<i>PPSS - HLG</i>
<b>Oct 13</b>	<b>Open*</b>	<b>Mark Howard</b>	
<i>Oct 20</i>	<i>Witches Brew</i>	<i>Larry Laughlin</i>	<i>PPSS - RES Only</i>
<b>Nov 5</b>	<b>RMSA Meeting</b>		
<b>Nov 10</b>	<b>Open*</b>	<b>Shannon Bingham</b>	
<i>Nov 17</i>	<i>Turkey Shoot</i>	<i>Chris Keller</i>	<i>PPSS - Open</i>
<b>Dec 8</b>	<b>Awards Banquet</b>		

\*Club Open points contest    \*\* Club HLG points contest

Italics indicates major national level contests available for points and PPSS events



### 2002 Board Members

<b>President:</b>	<b>Dr. Danny Williams</b>	<b>(303) 903-2291</b>	<b><a href="mailto:drdandc@juno.com">drdandc@juno.com</a></b>
<b>Vice President:</b>	<b>Bob Johnston</b>	<b>(303) 678-5597</b>	
<b>Secretary:</b>	<b>Bob Rice</b>	<b>(303) 745-5269</b>	<b><a href="mailto:bob.rice@tobin.com">bob.rice@tobin.com</a></b>
<b>Treasurer:</b>	<b>John Pearson</b>	<b>(303) 306-6800</b>	<b><a href="mailto:JTP1006@earthlink.net">JTP1006@earthlink.net</a></b>
<b>Past President:</b>	<b>Shannon Bingham</b>	<b>(303) 877-7557</b>	<b><a href="mailto:binghams@boulder.earthnet.net">binghams@boulder.earthnet.net</a></b>

#### Member Support

<http://rmsa.homestead.com>

Chief

Instructor:	Jack Zika	(303) 279-1549	(303) 505-9488 (Pager)
Instructor:	Mark Howard	(303) 278-7519	<a href="mailto:MHoward@spaceimaging.com">MHoward@spaceimaging.com</a>
F3B/F3J:	Mark Howard	(303) 278-7519	<a href="mailto:MHoward@spaceimaging.com">MHoward@spaceimaging.com</a>
Librarian:	Tracy Cochran	(303) 934-8838	<a href="mailto:Tcochran@idcomm.com">Tcochran@idcomm.com</a>
Newsletter:	Jim Monaco	(303) 464-9895	<a href="mailto:JimMonaco@earthlink.net">JimMonaco@earthlink.net</a>

#### Winch Masters

Bob Rice	(303) 745-5629	<a href="mailto:Bob.rice@tobin.com">Bob.rice@tobin.com</a>
Bob Johnston	(303) 678-5597	
Mike Verzuh	(970) 532-0638	<a href="mailto:mike.e.verzuh@seagate.com">mike.e.verzuh@seagate.com</a>
Gary Lewan	(303) 277-1375	
Dr. Dan Williams	(303) 439-7777	<a href="mailto:drdandc@juno.com">drdandc@juno.com</a>



#### Directions to Field

Take I-76 to exit 16. Turn left and follow the frontage road through the circle onto 120<sup>th</sup> eastbound towards the airport. Take 120<sup>th</sup> 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*