

2006 NAR Medium Section of the Year

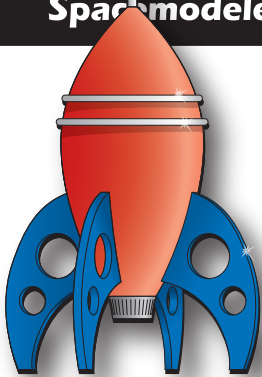
2007 NAR Medium Section of the Year

# MASA

# Planet

Minnesota Amateur  
Space Modeler Association

Volume 11, Issue 1  
January-February 2008



mn-rocketry.net

**MASA**

Established January 1998  
NAR Section 576



## NARCON 2008 is Just Around the Corner Literally MASA Hosts National NAR Event

MASA is once again hosting the National Association of Rocketry's Annual Convention, affectionately known as NARCON. NARCON 2008 will be held on March 14-16, 2008 in Rochester, just south of the Twin Cities.

NARCON is held for the purposes of educating those interested in all aspects of hobby rocketry. Events include keynote speakers, training seminars, workshops, rocket-building sessions, open discussion forums, a sport launch, and much more!

Covered topics include technical sessions on all levels of rocketry from beginner to advanced, competition, educational aspects, safety, design and more. All rocketeers (all ages, skill levels and affiliations) are invited to attend!



NARCON 2008 will feature Special Guest Speakers **Vern and Gleda Estes**, founders of the most recognized company name in model rocketry! This year is also a celebration of 50 years of the NAR, and the theme for NARCON 2008 is "Looking Back - Paying Forward".

All MASA members are welcome and encouraged to attend NARCON, not only because our club is hosting, but it is so close to home this year.

Did you know that anyone is welcome to present a topic at a NARCON seminar or workshop? Share your ideas, creations, inventions or any other rocketry skill that you have with others by being a NARCON presenter! Think about ways you can share your experiences with other rocket enthusiasts.

MASA members can consider car-pooling down to Rochester with other MASA members.

Don't be the only MASA club member to miss out on this great national event. Advanced registration ends soon, so visit [www.narcon2008.org](http://www.narcon2008.org) today!

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### Time to Renew MASA Membership for 2008

All MASA club memberships expired at the end of the calendar year, so make sure you renew your membership soon for 2008 via the club website!



### New Club Officers for 2008

Made official at the January 10th MASA meeting, the new MASA club officers for 2008 are:

**President - Alan Estenson**

**Vice President - Carol Marple**

**Secretary/Treasurer - Rick Vatsaas**

Congratulations to our new leadership team!

### Contributors to this issue:

- Ben Ericksen - Carol Marple
- Alan Estenson - Jeff Taylor
- Ray King

Thank You  
Thank You  
Thank You  
Thank You



# MASA Planet

## A Visit to the “Other” National Air & Space Museum

### The Steven F. Udvar-Hazy Center By Jeff Taylor

Where can you find an Air France Concorde, the B-29 Superfortress “Enola Gay”, a Redstone Rocket, an SR-71 Blackbird, and the Space Shuttle “Enterprise” all under one roof? These and many more air and space artifacts can be found at the Smithsonian Institution National Air & Space Museum’s Steven F. Udvar-Hazy Center located just outside of Dulles Airport in Washington DC.

The Steven F. Udvar-Hazy Center opened in 2003 after the National Air & Space Museum on the National Mall in Washington DC ran out of space. The 760,000 square foot hangar-shaped building used 40,000 cubic yards of concrete, 6500 tons of steel, 800,000 square feet of roofing, 7100 gallons of white paint and 122 42” diameter caissons in its construction. The Center’s one millionth visitor passed through the doors just six months after it opened.

The Boeing Aviation Hangar is 10 stories tall and over 3 football fields long and houses aircraft of all types, from a Curtiss Jenny to the Concorde. The adjacent 8 story tall McDonnell Space Hangar includes the Shuttle “Enterprise”, Frank Borman and Jim Lovell’s Gemini VII capsule, as well as many rockets, satellites and missiles. The Center also houses an IMAX theater and a 164 foot tall observation tower to watch air traffic at Dulles.

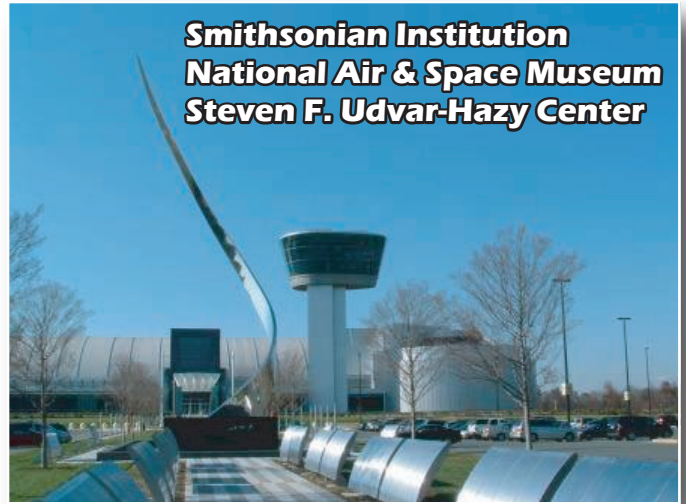
Last month while on a business trip, I was fortunate enough to have a few hours to kill before a return flight out of Dulles, so I took advantage of it and visited the Steven F. Udvar-Hazy Center. With camera in hand, I whisked my way through the museum snapping pictures left and right. The highlight for me was definitely to see the Enterprise, but it was also neat to see the Apollo 11 floatation ring and flotation bags and the Apollo 11 Mobile Quarantine Facility (the converted Airstream trailer that the astronauts stayed in for 65 hours after coming back to earth).

If you ever get a chance to visit Washington DC and the Smithsonian National Air & Space Museum on the Mall, don’t forget to also spend some time at the Steven F. Udvar-Hazy Center. You won’t be disappointed.

More information on the National Air & Space Museum can be found on the web at [www.nasm.si.edu](http://www.nasm.si.edu)



**Smithsonian Institution  
National Air & Space Museum  
Steven F. Udvar-Hazy Center**



**Space Shuttle Enterprise**

**Pioneer 1 Flying Rocket Kit  
Donated by G. Harry Stine**



**Aviation Hangar**



# MASA Outreach - The Next Generation Paying Forward

## Eight Year Old MASA Member Ben Ericksen Presents Rocket-Building to His Second Grade Classmates By Ben Ericksen

*[Carol Marple's Note: My 8 year old nephew Ben had a class assignment to give an oral demonstration to his classmates on how to build something. The assignment required an explanation and demonstration of the steps, and to show off the final completed project. Ben chose to do his demonstration on model rockets. The following is Ben's Outreach Report]*

One day my teacher sent home a sheet that said I would be doing a demonstration. I did my demonstration about rockets. My demonstration day was on the December 17 Monday. First went Shana. She did her demonstration on picture frames. Next went Kaitlin she did her demonstration on muffins. Then I went I did my demonstration on the skywriter which is a rocket.

On the 13 of December aunt Carol came over. It was the night the Holiday Train came. We went and saw the Holiday Train we walked all the way to the front I played on the snow piles on the way. Then we brought my brother his medicine when he was at work. Then we went and got some hot chocolate at AmPride. Then we went to my house.

When we got home we practice putting it together. Aunt Carol wrote it on a peace of paper. On Sunday my mom and me put the writing in my folder.

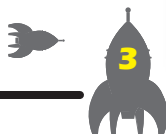
On Monday I got ready for school. When my grandma got there my sister brought the rockets out to the car and she held them on the ride to school. When we got to my school my sister gave me the bag and I walked down the sidewalk and into the school. I had Jeff's Skywriter. When I got to the rug that all the second and third graders sit all my friends asked if the rocket was a pencil. I said no I don't think the world or factures make pencils that big.

At ten fifteen we did our demonstration. Shana went first then Kaitlin went then I went I put the one that was not put together. When I was done I showed them what a finished one looks like. Then I showed some pictures and some of the other rockets I made and had 3 questions.

When I got home that day everybody said I did a good job.

THE END.

Ben



# MASA Planet

## Ben Unpacks a Skywriter Kit



Photo by Carol Marple

## Ben Captivates His Audience



Photo by Carol Marple

## Demo Complete!



Photo by Carol Marple

## Ben Shows Off His "Alan Estenson Autograph Series" Totally Tubular

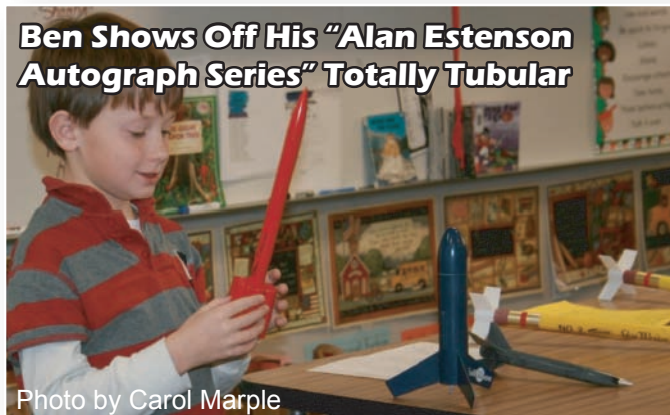


Photo by Carol Marple

## The QCR Easy Slide III Glider

Kit Review  
By Ray King



**Rocket Name:** QCR – C Rocket Glider (Kit #25)

**Brief:** The Easy Slide III is a C motor sliding wing rocket glider sold by QCR (Qualified Competition Rockets). It uses an 18mm motor mount and rubber band-loaded wing that slides forward after the ejection charge burns the thread holding the wing in place.

**Construction:** This is supplied with:

- 1 - Nose Cone
- 1 – Body Tube
- 3/16" Thick Balsa - Wing
- 3/32" Thick Balsa - Horizontal Stabilizer
- 3/32" Thick Balsa – Rudder
- 1/16" Thick Plywood – Wing Support
- 1/16" Thick Plywood - Stab Incidence Shim
- 1 - .026" Wire Hook ("J" Shape)
- 1 - .026" Wire Hook (squared "U" shape)
- 2 – Wire Launch Lugs Hooks (Elected not to use)
- 1 - .026" Wire Hook (small "U" shape)
- 1 – Engine Hook (Elected not to use)
- 2 – Small plastic "sliding box" pieces

QCR kits are competition kits designed for experienced builders. The instructions outline the only basics. As a beginner rocket glider builder, I struggled through this build because of the lack of step-by-step instructions.

I started by cutting out the wings from the marked balsa sheets provided. Rather than having templates to follow, the balsa sheets were marked with cutting lines. Next, I shaped all the balsa components: the wings, stabilizer, rubber, and boom support. I spent the most time shaping the airfoil on the main wing. After I was satisfied with the airfoil, I cut the wing and epoxied in place with 5 minute epoxy to create the dihedral. Next, I epoxied the plastic boxes to the plywood wing support. This was a little tricky – the boxes need to be perfectly aligned to ensure the boom can slide smoothly through both without binding. I punched small

holes in the plywood prior to gluing to the wing to ensure the best attachment possible.

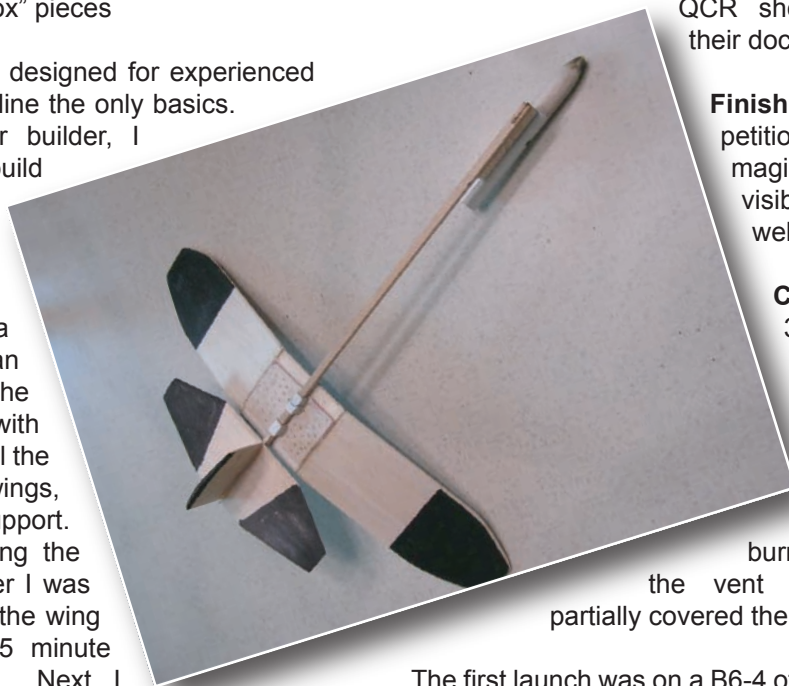
I attached 3 of the 5 hooks provided. I installed the large "U" shaped hook for the main wing, and the small "U" shaped hook to the one end of the boom. I glued the rudder to the horizontal stabilizer ensuring the rudder was straight. Next, I glued this assembly to the very end of the boom near the small "U" shaped wire. A small plywood shim was glued under the front of the horizontal stabilizer to establish the correct stab incidence.

I assembled the motor tube, nose cone, and boom support electing to not use the engine hook or the "U" shaped launch rod wire forms. I planned to use this in competition and launch from a piston so neither of these are required. Next, I slid the wing in place and then attached the motor-nose cone assembly to the boom. The "J" shaped hook was installed on the very front of the boom.

I prepped the glider for flight by installing a used motor and rubber band to hold the wing forward. This was the first rocket glider I had ever assembled so I didn't know what to expect for the first hand launch. I was amazed it flew very well. I did a little more trimming by adjusting the stop location of the main wing and I was ready for the first flight.

**Pros:** The components were of good quality and the glider needed very little trimming to fly very nicely.

**Cons:** The instructions were not meant for a beginner. QCR should consider updating their documentation.



**Finishing:** Since this is a competition model, all I did was use magic marker to create a visible surface in the air as well as on the ground.

**Construction Rating:**  
3 of 5

**Flight:** Flight prep reminded me of a helicopter model. To ensure the thread burned, I taped over one of the vent holes completely and partially covered the second with Mylar tape.

The first launch was on a B6-4 off of a piston. The launch was nice and straight, turning a bit into the wind, but overall all very nice boost. Transition to glide was after apogee a little late. Overall, the glider flew pretty well, but

**Continued on the next page...**



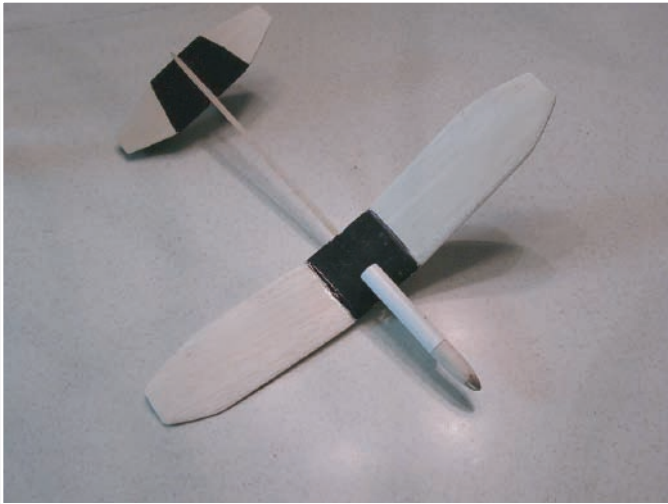


## Easy Slide III Continued

it did need some additional trimming. The flight was 17 seconds which I was please with considering how windy it was.

The second launch was on a C6-3 again off of a piston. Just after launch the rocket flew almost horizontal and the wing broke under boost causing the rocket to spin to the ground. I realized after rebuilding that the instructions highlight the need to reinforce the main wing with packaging tape. I have incorporated this into the rebuilt model. The rocket has great potential and I am looking forward to the next launch.

**Flight Rating:** 4 of 5



**Summary:** Overall, I think this is very good rocket glider. I can't wait to fly it some more and re-finishing my trimming and flying ability. Although, as I was building this kit I struggled with the instructions, the sketchy detail has built my confidence and I am looking forward to building more models of this type.

**Overall Rating:** 3 ½ of 5

Ray King



# MASA Planet

## Happy Birthday Spirit and Opportunity Mars Rovers on the Job for Four Years



After only expecting to last for 90 days, the Mars rovers "Spirit" and "Opportunity" are still on the job collecting data on the Red Planet for NASA four years later. The two rovers have cruised around for a total of nearly 12 miles and recorded over 210,000 pictures. Spirit, who now has a broken wheel and can only drive backwards, has found a safe hiding spot to sit through the Martian winter. Meanwhile, Opportunity continues to explore the Victoria Crater with no immediate plans to park anywhere.

Twin Cities-based ATK helped launch the rovers and helped them safely land on Mars. ATK also manufactured the solar array substrates that power the rovers and the composite/titanium optical masts that house their navigational and panoramic cameras.



## 2008 NAR National Events

### Road trip, anyone?

**March 14-16** - NARCON 2008 - Rochester, MN

[www.narcon2008.org](http://www.narcon2008.org)

**May 17** - TARC Finals - The Plains, VA

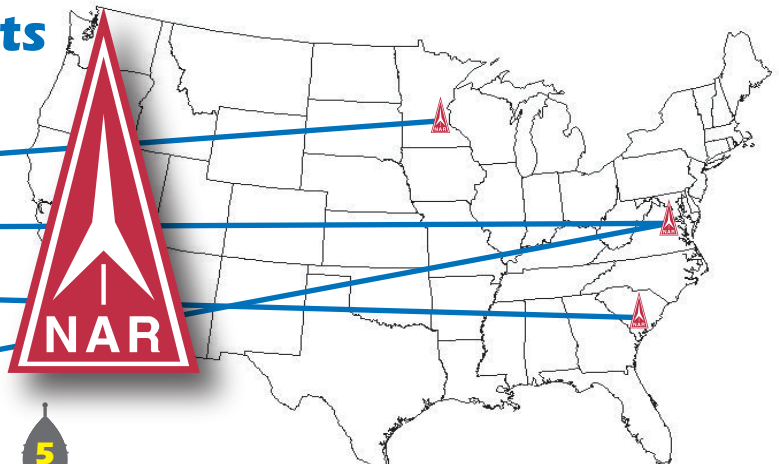
[www.rocketcontest.org](http://www.rocketcontest.org)

**May 24-26** - NSL 2008 - Orangeburg, SC

[www.nsl2008.org](http://www.nsl2008.org)

**July 26-August 1** - NARAM-50 - The Plains, VA

[www.narhams.org/naram50/](http://www.narhams.org/naram50/)



# MASA Planet

## MASA Directory

Minnesota Amateur Spacemodeler Association  
NAR Section 576  
Established January 1998  
Founding President: Russ Durkee

### Club Website

[www.masa-rocketry.org](http://www.masa-rocketry.org)

### President and Webmaster

Alan Estenson - [estenson@mn-rocketry.net](mailto:estenson@mn-rocketry.net)

### Vice President

Carol Marple - [cjmarple@peoplepc.com](mailto:cjmarple@peoplepc.com)

### Secretary/Treasurer

Rick Vatsaas - [rick@vatsaas.org](mailto:rick@vatsaas.org)

### MASA Planet Newsletter Editor

Jeff Taylor - [jeff.taylor@mn-rocketry.net](mailto:jeff.taylor@mn-rocketry.net)

## Ray King Wins EMRR's 2007 Spaceship Design Contest!

Ray King's entry in the EMRR Spaceship Design Contest took top honors as he beat out 10 other contestants. Ray's submission was called the Neutron, and was based on a replication of the CoolRockets.com Space Bucket.

Online voting placed Ray's creation at the top in all categories, giving Ray a final score of 107.5 points. Way to go Ray! We hope to see this rocket at a future MASA launch!

Check out Ray's fabulous handiwork on his Neutron on page 8 and 9 of this issue of the Planet. Check out the official contest rules and all the other contest entries at [http://www.rocketreviews.com/contest\\_spaceship\\_design2007.shtml](http://www.rocketreviews.com/contest_spaceship_design2007.shtml)



Apollo 7 Astronaut Walt Cunningham  
Rendering by Jeff Taylor

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## 2008 Launch Windows (January - July)

Subject to Change - Check MASA Website for updates

All MASA Launches are "Misfire Alley" (bring your own launch pad and controller)

### MASA January Launch

Saturday, January 26 - 10:00 am to 1:00 pm  
Location: White Bear Lake

### MASA February Launch

Saturday, February 23 - 10:00 am to 1:00 pm  
Location: White Bear Lake

### MASA March Launch

Saturday, March 29 (one week later than normal)  
10:00 am to 2:00 pm  
Location: TBD (possibly Apple Valley High School)

### MASA April Launch

Saturday, April 26 - 9:00 am to 4:00 pm  
Location: TBD (hopefully Nowthen)

### MASA May Launch

Saturday, May 31 (one week later than normal)  
9:00 am to 4:00 pm  
Location: Nowthen

### MASA June Launch

Saturday, June 28 - 9:00 am to 4:00 pm  
Location: Nowthen  
Themes: Boost Gliders

### MASA Summer Picnic

Saturday, July 19 - 2:00 pm to 8:00 pm  
Location: Elk River VFW

### MASA July Launch

Saturday, July 26 - 9:00 am to 4:00 pm  
Location: Nowthen  
Themes: Clusters

# MASA Planet

## 2008 Meeting Schedule (January - July)

Subject to Change - Check MASA Website for updates

Unless otherwise specified, all meetings shall be held at the Science Museum of Minnesota in St. Paul, Classrooms 11 & 12

### MASA January Meeting

Thursday, January 10 (one week later than normal)  
7:00 pm to 9:00 pm  
Topic: 2008 officer elections; 2008 meeting topics

### MASA February Meeting

Thursday, February 14 (one week later than normal)  
7:00 pm to 9:00 pm

### MASA March Meeting

Thursday, March 6 - 7:00 pm to 9:00 pm

### MASA April Meeting

Thursday, April 10 (one week later than normal)  
7:00 pm to 9:00 pm

### MASA May Meeting

Thursday, May 1 - 7:00 pm to 9:00 pm

### MASA June Meeting

Thursday, June 5 - 7:00 pm to 9:00 pm

### MASA July Meeting

See Summer Picnic in the 2008 Launch Window

Remember to check out

**[www.masa-rocketry.org](http://www.masa-rocketry.org)**  
for the latest Launch Dates, Meeting  
Dates and other Important News

## Where are the MASA launch sites?

See [www.masa-rocketry.org](http://www.masa-rocketry.org) for details and directions

### White Bear Lake

Sunrise Park Middle School  
2399 Cedar Ave - White Bear Lake

### Nowthen

Fricke Sod Farm  
Southwest corner of Tiger St NW and 211th Ave NW - Nowthen

### Elk River - Rogers VFW 5518

VFW Memorial Sports Complex  
7350 Quaday Ave - Elk River

The MASA Planet is the official newsletter of the Minnesota Amateur Spacemodeler Association. It is published bimonthly as a service to its members. MASA authors and photographers retain rights to their submissions, which are used by permission. Send submissions to [jeff.taylor@mn-rocketry.net](mailto:jeff.taylor@mn-rocketry.net). The Planet is available in color on MASA's web site: [www.masa-rocketry.org](http://www.masa-rocketry.org)

If your email address, U.S. Mail address, or phone number changes: Please send notice of your change to [masa@mn-rocketry.net](mailto:masa@mn-rocketry.net). Include your name and old and new addresses. We depend on email for communicating important information. When an email address starts "bouncing", we lose contact with you.





# MASA Planet

## Building The "Neutron"

By Ray King

This is my entry for the EMRR's "Retro Spaceship" rocket design. The contest was very straightforward: 1) Design a flyable rocket that is as closely as possible replicates one of these six Spaceship pictures found at Cool Rockets. Each of these pictures induced that "I'd love to build that" feeling in me, so I figured we would see what you could do; 2) Write up a how-to article, with pics and templates, to allow others to be able to build one; 3) Submit pictures; and 4) Name the Spaceship.



So here is the story: When this contest was first introduced I was very excited that I finally had a good excuse to build a vacuum former, so I picked "Cool Rockets Space Bucket".

An inexpensive vacuum former design will be included in a future MASA Planet newsletter.

The name: My daughter who helped throughout build said it looks like a rocket that Jimmy Neutron would build so we have named it "The Neutron."

The plan: To use a D motor and make this rocket really fly high. In addition, I really didn't want to destroy the look of the rocket with a nose cone so I decided to make this a rear engine ejection. I saw this employed on the "Decaf-feinater" by Flis Kits and I had used this in one other scratch built rocket. I was a little nervous because it seemed to stress the shock cord and other components especially since I was going to neck down the ejection tube from 24mm to 18mm for more parachute space.

After I finished my new toy (vacuum former) and I had some nice shapes; I built two rockets (a prototype for testing and the final painted model). I used duct tape on the prototype so I could make modifications after some test flights. In addition, I allowed the body tube to extend out the front so I could add nose weight if needed.

Prior to the first flight I did attempt to model the Neutron in RockSim. The result suggested a ton of nose weight. I also spun the rocket adding nose weight a little at a time until it appeared stable. I ended up with a 15 oz rocket that appeared stable during the spin test. I questioned if a D motor was now enough.

The first flight turned out better than anticipated. The boost was OK with a number of twists; however, the rocket arched over and didn't eject until very late. The ejection charge also broke the shock cord. For the next flight I added side wings in an attempt to make the boost a little more stable. Rocket didn't climb as high and ejection was very late. In fact the rocket was buried in the snow when ejection finally did occur. I continued to modify the shock cord material, attachment, length, etc. for the next 3 flights. Thankfully, we had snow as I was getting really good at "snow darts". Finally, after moving up to an E motor and 300+ pound Kevlar shock cord I achieved a successful flight.

On the final flight day (12-15-07- contest ending date) it was a cool -1°F. The plan was to launch the prototype and 3 launches of the final painted model.

First flight – prototype – successfully launched with an E9-4 motor – nice, straight, with only a few twists as it gained altitude. The model arched over at apogee and as I prayed for the ejection – it finally occurred – "will the shock cord hold?". "Yes" - the parachute opened, not completely, but enough. The rocket suffered significant damage to the nose and lost most of its nose weight. I decide to retire the prototype after this flight and risk the final model.



Second flight – Final painted model – with a record of 5 failures out of 7 flights, I was extremely nervous. The temperature and a polystyrene model likely meant failure would result in destruction. Count down 5...4...3...2...1 – launch (E9-4 motor) – straight off the launch rod, 2-3 twists as it climbed. It reach apogee and started descending fast – "ejection, ejection, where are you" – finally ejection, parachute out, no shock cord failure – "YES!!!!". Upon recovery I found that one for the side Plexiglas fins separated at the glue joint and the Kevlar shock cord was severely burned. The shock cord likely

**Continued on the next page...**





## The Neutron Continued

would not last another flight. I decided after inspection that I would retire this model after only one flight – maybe in the future I will attempt it again, but I will need to improve the shock cord/rear engine ejection design.

If I rebuild this rocket I will shift from the rear engine ejection system to a nose cone ejection design. The rear engine ejection is too unreliable, it stresses all the components especially the shock cord. In addition, when using a T55 body tube and T50/T20 combo motor tube there is very little space for a parachute.

OK now it is time to campaign the online voting with open soon so go check out the other cool rocket design and vote for your favorite. Hopefully, that will be the Neutron!!!!

Update: Voting has closed as of press time. Ray's entry took FIRST PLACE (see page 6). Congratulations Ray!

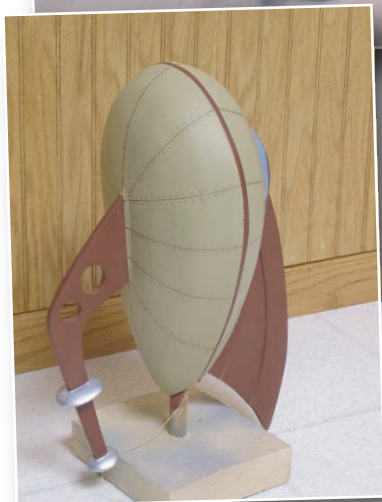
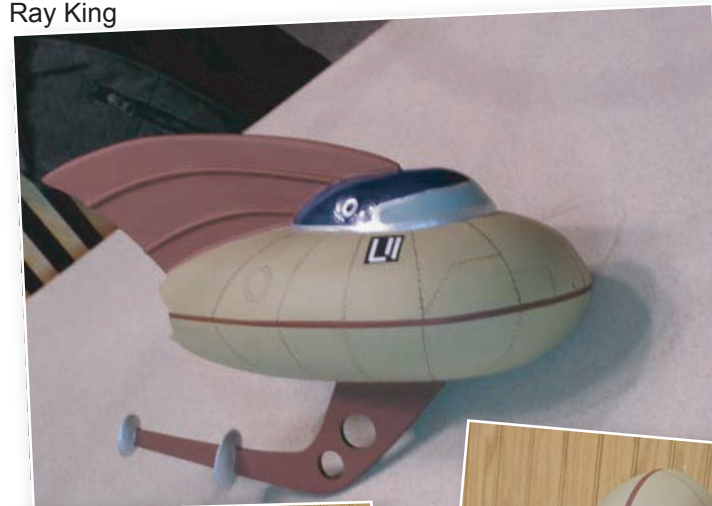
To see the contest when it opens it, visit:

[http://www.rocketreviews.com/contest\\_spaceship\\_design2007.shtml](http://www.rocketreviews.com/contest_spaceship_design2007.shtml)

For construction details in case you want to build and improve on the Neutron, visit:

[http://www.rocketreviews.com/reviews/scratch/design\\_neutron.html](http://www.rocketreviews.com/reviews/scratch/design_neutron.html)

Ray King



# MASA Planet



# MASA Planet

## 2007 Holiday Party

By Alan Estenson

On Saturday, December 8, about 25 MASA-ites gathered at the residence of Buzz & Kathy McDermott in Blaine for the annual club holiday party.

The annual MASA gift exchange game was once again a fun time with about 20 people participating. A toolbox and a kit for a large crayon rocket were among the "hot" items that traded hands many times.

2007 MASSY Awards: Mike Erpelding gave out multiple recognition awards for NARCON volunteers, TARC mentors, and other noteworthies.

Alan Estenson gave out three Prang awards for the year:  
Lesser Prang Award: Mark Thell, for CHAD-Staging in the Face of Common Sense, for the flight of his "Flying Martini Glass of Death" on July 28.

Lesser Prang Award: Jim Myers, for Lawn-Darting Two Flying Lumberyards with only a Single Launch, for the flight of his Stage II Thunder on April 28.

Greater Prang Award: David Whitaker, for Unstable Flight and Rocket Disintegration in the Realm of Multi-Staging, for the flight of his CC Express on October 27.

Thanks to Buzz and Kathy for again hosting the MASA Holiday Party!

In honor of this recognition, Dave received the traveling Prang Trophy (a copy of the William Shatner Estes video and the rocket sand pail set) to hold for 2008. In a startling development, Dave protested that not only didn't he remember this flight, but he has never had a CC Express rocket! Were the flight cards in error? Does some mystery rocketeer actually deserve this award, or is Dave pulling our collective legs? Stay tuned...

Drawings were held for free door prizes. The winners were:

(The following prizes were donated by Hub Hobby Center of Little Canada.)

Don Boe - Estes Cosmic Cobra kit  
Michelle Heren - Estes Paveway kit  
David Whitaker - Semroc Space Plane kit  
Aimee Whitaker - Estes Super Neon kit  
Philip Gibbens - Semroc Laser X kit  
Richard Shmel - Estes Der Red Max kit

(The following prizes were donated by MASA.)

Renee Gibbens - Estes Yankee kit  
Daniel Boe - 14" LOC parachute  
Cindy Whitaker - Modern High Power Rocketry book



A HUGE thanks to Buzz & Kathy for hosting the party again this year! A BIG thanks to Hub Hobby Center for donating prizes! An enormous thanks to everyone who attended!

ADDRESS SERVICE REQUESTED

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c/o Jeff Taylor  
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# MASA Planet

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