

# MASA PLANET

The Official Newsletter of the  
**Minnesota Amateur Spacemodeler Association**

Established January 1998

2006 and 2007 NAR Medium Section of the Year

Host of NARCON 2007 and NARCON 2008

2008, 2009 and 2010 LAC Newsletter Award Recipient

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## MASA Directory

Established January 1998

Founding President: Russ Durkee

### 2011 President

Carol Marple - [masarocketry@rocketmail.com](mailto:masarocketry@rocketmail.com)

### 2011 Vice President

Neal Higgins - [nthiggins@gmail.com](mailto:nthiggins@gmail.com)

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### MASA Planet On-Line

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

### Club Website

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

### Webmaster

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

### Club Yahoo Group

<http://groups.yahoo.com/group/masarocketry/>

## Rocket Contest

### Name These Rockets

Buzz McDermott is challenging all MASA members to a "Name These Rockets" Contest.

The rules are simple:  
Be the first to EXACTLY identify the kit names of all four rockets, including the company (or companies) that produced the kits. They are all built from commercial kits. The winner is the first to correctly identify the rockets in an email sent directly to Buzz at [L3EXCAL@comcast.net](mailto:L3EXCAL@comcast.net)

Buzz is the sole judge in this contest, and prizes (to be determined) will be awarded at the whole discretion of Buzz.

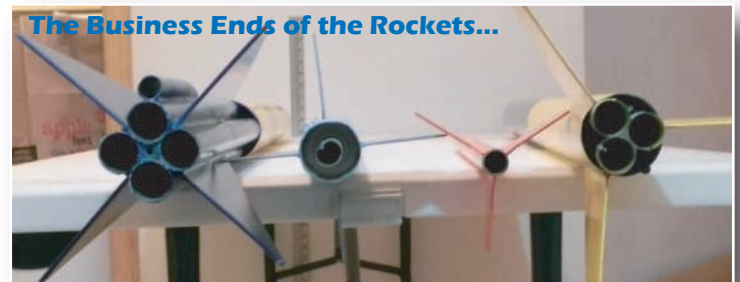


WARNING: Buzz is not restricting the rockets to currently available kits or even companies currently in business. They are also not restricted to companies whose catalogs have been scanned into one of the various archive websites. They are not prototypes, though, and have been commercially available at some time (including maybe even today).

Buzz



### The Business Ends of the Rockets...



## A Simple Rocket

By Ken Jarosch

April 25, 2008 & September 09, 2008 - First Flight Aug. 14, 2011

After building several involved labyrinth/bulkhead rockets and a couple of Roto-copters I thought I deserved a couple of "Simple Rockets". In the true Alpha design of a body, nose cone and chute, period. Ok, it was going to be a HPR. I probably will make just a few standard simple HPR upgrades. Just a commodity rocket for every day flying. (Note, my son says I don't build simple rockets!)

The old Estes Tech Articles talked about the Sweet Spot in Model Rockets stability: the length to diameter ratios. From a minimum of 10:1 to a maximum of 16:1, you would find the most commonly used areas. Example, today that is the 40":4" minimum of the Loc Bullet or the AeroTech Sumo. The Loc IV at 48":4" is in the 12:1 ratio. (Sweet Spot within the Sweet Spot like a 12" Alpha) My G-Force at 58" falls in the 14.5:1 ratio. Using minimum and maximum in the 4" class rockets brings you between 40" to 64" lengths.

Below the natural minimum ratio, stability becomes more of an issue without additional steps like nose weight or larger fins. (The third answer in the L2 test is to make the rocket longer.) Even at 10:1 ratio the AeroTech Sumo uses a heavier nose cone for the H motors. Standard 4" nose cone for Aero-Tech is about 5 oz., whereas, the Sumo's nose cone is over 9 oz. for the HPR motors.

On the longer length rockets, wind instability may become an issue due to the movement of the Dynamic Cp. While building model rockets, who would have thought that an over stable rocket was a problem. There have been several articles indicating how over stable rockets have become unstable in certain wind conditions. Some rocketeers have actually added tail weight to bring the over stable rocket back into the stable range. (Sounds like heresy.)

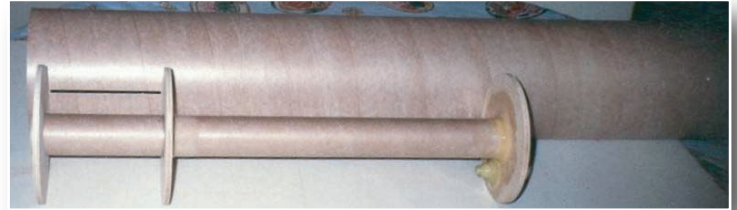
Even just stable rockets can have bad flight characteristics in the wind with low average thrust motors. The Super Big Bertha or Executioner types would go horizontal in a wind on a D12-3 or even more so with E9's.

I have several HPR that have to be flown on calm days or only with high thrust Blue Thunder motors versus the White Lightning. Example is my 77" Maxi-Magg on an I357T vs the I161W. The I161W is out. I shudder at the thought of the 6 lb. "I" rocket leaving the field horizontal.

I especially like the 38mm rockets in the 5.54" class. Both the motor mount tube and body tubes are really a notch above the typical 4" 29mm rocket. I thought I might spend some time in this area. Using the model rocket length to diameter ratios brings me to a 55":5.54" minimum to an 89":5.54" maximum. Actually the 14:1 max. ratio length of 78" is more practical.

Using this information, the Simple Rocket Plan and the LOC catalog brought me to the LOC PK-76 "I-ROC". At 55" x 5.54" it is at the minimum ratio. For me this looks like a perfect baby "I" (I161W) motor rocket. Hence the name?

The first Standard HPR upgrade was to use the 3 CTR system to build the fin tab cage.

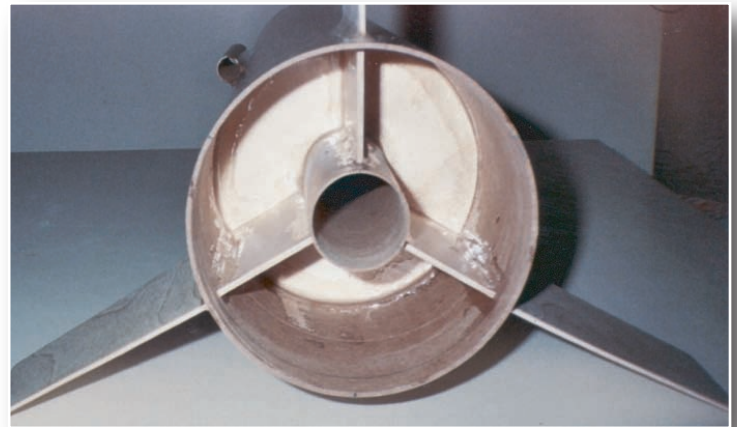


Next upgrade: The kit comes with a #SCMBA-250 - 1/4" shock cord mounting bolt assembly. I use this for my 3" and 4" rockets. But for the 5" rockets I bought the #SCMBA-750 3/8" assembly.

The photo below shows the heavy motor tube with the thick 1/4" plywood CTRs. Note the use of the 3 CTRs and the 3/8" shock cord mounting bolt assembly.



By using the 3 CTR system you have complete access to the fin tabs for internal epoxying all the joints. The photo below shows the fin tabs epoxy fillets to the internal/external body joint. Epoxy is also applied to the fin tabs at the motor tube, middle and rear plywood centering rings joints. The CTRs are epoxy reinforced to the motor and body tube. All joints are epoxyed for maximum strength.



After this internal work is done the rear CTR with motor retaining hardware is test fitted into the body aft end. If the fit is good, I then apply a layer of epoxy to the motor tube, the aft ends of the fin tabs and the adjoining body tube. With one steady push I set the rear CTR in place completing the fin tab cage.



**Continued on the Next Page....**



# A Simple Rocket Continued

When everything is cured, I brush on a thin coat of 30 minute epoxy over the outside face of the rear CTR and the exposed internal aft body surface. See the next photo with the Rouse-Tech 38/360 casing alongside for reference. The launch lug ends are trimmed at a 45d angle for a nice sloping touch.



Since this rocket has no labyrinth baffle, measures must be taken to protect the recovery system. The next photo shows the complete recovery system for the "I-ROC". This includes the fin can 5/16" Quick Link, TN-25 tubular nylon shock cord with the Nomex Protective Sleeve, Nomex Protective Blanket, 50" LOC Nylon chute with the 9/0 Swivel and the upper 1/4" Quick Link for the nose cone attachment.



The final upgrade was to install a 5/16" pipe hanger "U" bolt with its back plate to the base of the 21" nose cone. I also used two additional 5/16" washers and nuts for external support and tightening. An access hole was cut in the nose cone shoulder and two holes were drilled for the "U" bolt in the base of the nose cone. A heavy layer of epoxy was applied to the inside of the nose cone over the back plate and nuts.



This completes the actual "Simple Rocket" construction. At this point the bare unfinished "I-ROC" weighs about 81 oz.

Before I installed the fins, I heavily sanded them with 220, 400 and 600 grit paper. After the rocket was finished I went over the fillets and fins with 400 and 600 grit paper again. At this point the fins were perfectly smooth. I applied one heavy coat of "Fill & Finish" to the fins. After which, I again sanded the fins with the 220, 400 and 600 grit paper for the final pre-primer preparation.

This rocket was finished April 25, 2008, and at the end of August 2008, I was just getting around to painting the "I-ROC". In my defense, I had several other large rockets to paint from the "Baffles" articles. The finish would be a simple paint job for the "Simple Rocket". Yet I still wanted to get an 80-90% good finish with only a medium level of work. Most fine finishes come from multiple light coats with complete sanding following each coat. I hate sanding especially when the paper clogs. Much of this can be reduced by giving the previous coat ample time to cure. This takes several days to a week.

My minimum level of finishing usually involves 3 coats of gray primer, 3 undercoats of Flat paint and 3 Gloss Top Coats. Not counting trim or details. In each of the above three operations, I give the rocket 2 light coats, wait a few days and sand. Then I give it a final heavy coat of primer, under coat and top coat. After the final prime and undercoats I try to wait at least a week before sanding to eliminate much of that paper clogging. I prefer to have my sanding done on a hard completely dry surface. You can tell when you sand, you will get a fine power and not clog bits. I used Krylon paints which I got 60% off at Michaels annual sale.

That was the Plan, but here's what happened. I wanted to get in at least one flight that year. Because it was getting late in the year and good painting days are coming up short, I decide to try to speed things up a bit. Normally I would prime and sand after the two light coats. I did all three coats in one day. While that was ok, I tried to start the sanding the next day. Bad idea. Normally I would have waited the two days for the light coats and a week for the final prime coat. When I tried to sand the 3 prime coats I just got the clogged paper. Also the finish was not smooth. Realizing my mistake, I sanded it level and wiped it down. I waited a day and gave it a medium final coat which I now waited a week to sand. What a pleasure it was to do it the right way. Now I used just one 2 x 2" piece of 400 grit and did the entire rocket without the clogging. Only fine dust came off and the paper cleaned up after all that sanding. The rocket's finish was hard and smooth. I managed to recoup the mistake. I gave the rocket a wet wipe and waited another day in preparation for the under coats

Now came the 3 under coats of Flat White Krylon. At this time Krylon had a new formula in its domed cans with the #51502 vs the older cans #1502. Besides having a new "Easy-Touch 360D nozzle the formula appears to be different. Gone is the "No Runs, No Drips, No Errors" label. Also on the back it no longer says Recoat: "Apply Multiple coats anytime", Now it gives the familiar "Before 1 hour and after 24 hours". Also the spray distance is 6-8" instead of the old 10-12". I had one old can and two new cans of the Flat White. I made several tests on paper to see if they were compatible. They were on paper.

So with some confidence I proceeded to under coat the "I-ROC" with both the new and old Krylon Flat White paint. Again, I had no problem with compatibility. However, the new Flat White sprayed a powdery white finish. I tried vertical and horizontal painting. I tried close up painting. This got the center of the spray wet but the edges were powder. After two coats the finish was a disaster. I pondered whether to let this dry and sand or give it the final heavy coat in hopes of covering up the powder. In some ways this heavy coat helped. The fuzzy finish was put down and what I ended up with was a very rough sand finish like your ceiling. I planned to wait a week but the weather opened up after 4 days so I attempted to sand. Another mistake. The paint just clogged the paper. So I just made a light over all sanding pass. I waited several hours and tried again. I finally got down to a hard surface but



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## A Simple Rocket Concluded

could not get it smooth. Then I tried an old Masters Sanding Film for dry/wet sanding. Using the old 400 grit film and light sanding I got the finish I wanted. Then I again wet wipe the rocket and put it aside for a day to dry before Top Coating with Krylon Gloss.

The next day I was prepared to Top Coat with Krylon Red Gloss on the nose cone. This also had been pre-tested on paper samples. I had a great day to start. Temperature at 60, Humidity at 52 and winds at calm to 4 mph. Planning to do it right this time I started with 2 light coats. Looks great. But while waiting for it to dry I notice that in several areas the under coat had developed a very nice wrinkle finish. At first it looked like a compatibility problem. Even though I had waited for 4 days, that wasn't enough time to cure. I decided to go for the third and heavy coat hoping again to lay this spot down. It worked quite well and is only visible very close up. After three coats I quit figuring to fly it this year and refinish it next year. On drying it got very smooth and shiny.

Now came the body itself. After the nose cone problem, I was somewhat apprehensive to proceed. So I took it slowly starting at the fins and then the body. Two lights coats on and no problems. While the sun helped see the edges of the new Gloss White at first, it later made it hard to see where the different coats left off. I got a few minor runs trying to spot fixed a missed area. I worked this out with wet paint. The final third wet coat went on great but on drying it did not come up to what would normally want. May need a fourth coat like the nose cone next year.

I think I will let the rocket cure out before any more painting. If I get a chance to fly, it's going up as is until next year.

With the exception of the problem of the powdery Flat White paint, most of these problems would have been prevented by waiting 2 days+ between the light coats and a week or more after the final coats. I just finished four other rockets using this technique and paint with no problems. With those rockets, the weather made me wait weeks between operations. Results were great with no problems.

2011

Fast Forward to August 14, 2011 at the TRA-MN launch. (Yes 3 years!!) The "I-ROC" still has the 2008 paint job. I couldn't decide on the fin trim color. (Red, Blue or Black). Using the Rouse-Tech 38/360 casing my motor choices were the I161W, I218R, I245G and the I357T.

The finished standard "I-ROC" weighs in at 86.4 oz. (See near right photo) Using the "Universal Payload Section", the extended "I-ROC" is now 75" x 5.54" and weighs 113 oz. (See far right photo) So the standard rocket will fly on the first 3 motors and the heavier extended rocket will use the I357T as a minimum. With these combinations the rocket will reach about 1000-1200ft.

At this TRA-MN launch it made its first flight on an I161W with perfect results. The recovery system worked as planned. Only thing noted was how the rocket just floated over the field. With no wind the landing was right at the flight line. Had there been any wind it might had been a walk. These LOC chutes have shown me that they tend to hold the air more than other chutes.

Looks like this is going to be a very "Simple and Reliable" rocket. We will try the other 3 motor types as we go.

Ken Jarosch  
MASA 148  
NAR 56442  
TRA 10290





# 2011 MASA Members

Registrations Received as of October 31

|                    |                      |                      |
|--------------------|----------------------|----------------------|
| Cheryl Anderson    | Renee Gibbens        | Robert Moser         |
| Hunter Anderson    | George Gleim         | Steven Moser         |
| Kevin Anderson     | Steve Hansberry      | Bob Moyle            |
| Levi Anderson      | Aidan Heaton         | Lance Murphy         |
| Corey Bedford      | Andy Heaton          | Mike Murphy          |
| Glenn Bedford      | Kelli Heaton         | Scott Murphy         |
| Kevin Bedford      | Scott Heaton         | Justin Nelson        |
| Lilia Bedford      | Andy Heren           | Mark Nelson          |
| Rohn Blake         | Neal Higgins         | Kenny Peterson       |
| Caleb Boe          | Alissa Hoyme         | Kent Peterson        |
| Daniel Boe         | Julie Hoyme          | Jason Pokorny        |
| Don Boe            | Ken Hoyme            | Nic Rosenau          |
| Joshua Boe         | Kirsten Hoyme        | Seamus Rosenau Blake |
| Craig Borchard     | Steve Hum            | Audra Rudys          |
| Caylin Bowman      | William Inboden, Jr. | David Schaffhausen   |
| Cindy Bowman       | Kenneth Jarosch      | Nancy Schaffhausen   |
| Craig Bowman       | Paul Jarosch         | Cathy Schwartz       |
| David Bright       | Abbie Karsten        | Joy Schwartz         |
| Sara Bright        | Kathie Karsten       | Larry Schwartz       |
| Alex Brown         | Patrick Karsten      | Ryan Schwartz        |
| Luke Brown         | Peightyn Karsten     | Todd Schweim         |
| Thomas Brown       | Abby King            | Dwayne Shmel         |
| Andrew Carlson     | Eric King            | Elizabeth Shmel      |
| Allison Carpenter  | Ray King             | Richard Shmel        |
| Elliot Carpenter   | Sharon King          | Susan Shmel          |
| Laura Carpenter    | Kurt Knox            | John Stenberg        |
| Todd Carpenter     | Lucas Knox           | Gene Stoneman        |
| John Clifton       | Cathy Komada         | Bryan Sullivan       |
| Kevin Cochran      | Jacqueline Komada    | Brianna Tamez        |
| Seth Cochran       | Jeffery Komada       | Maria Tamez          |
| Ted Cochran        | Vanessa Komada       | Alyssa Taylor        |
| Jason Colt         | Edward LaCroix       | Jeff Taylor          |
| Kent Delahay       | Ellison Lenz         | McKenna Taylor       |
| Ben Ericksen       | Sarah Lenz           | Mark Thell           |
| Ethan Erpelding    | Stuart Lenz          | Brian Uhlenkamp      |
| Mike Erpelding     | Braden Lenzen        | Julia Uhlenkamp      |
| Alan Estenson      | Christopher Lenzen   | Lukas Uhlenkamp      |
| Chris Feld         | Heidi Lenzen         | Natalie Uhlenkamp    |
| Jace Flansburg     | Alex Lundeen         | Cheryl Vatsaas       |
| Jeff Flansburg     | Phyllis Lundeen      | Christian Vatsaas    |
| Jennifer Flansburg | Randy Lundeen        | Ingrid Vatsaas       |
| Espen Fredrick     | Rebecca Lundeen      | Rick Vatsaas         |
| Kris Fredrick      | Stephen Magiera      | Anand Vyas           |
| Kristina Fredrick  | Carol Marple         | Aimee Whitaker       |
| Owen Fredrick      | Buzz McDermott       | Austin Whitaker      |
| David Gensler      | Bruce McLeod         | Cynthia Whitaker     |
| Art Gibbens        | Lyle Merdan          | David Whitaker       |
| Hannah Gibbens     | Gerald Meux Jr       | Ronald Wirth         |
| Mathias Gibbens    | David Miller         | Joseph Wright        |
| Philip Gibbens     | Alex Moser           | David Wurmfeld       |
|                    | Jack Moser           |                      |

Roster information provided by  
MASA Secretary/Treasurer Gerald Meux Jr.

**151 Members to Date!**

# MASA PLANET



Chat with other MASA members and get the latest MASA news and information on the MASA Yahoo Group found at <http://groups.yahoo.com/group/masarocketry>. You can sign up for the Yahoo Group by sending an email to the following address:  
[masarocketry-subscribe@yahoogroups.com](mailto:masarocketry-subscribe@yahoogroups.com)

## 2011 MASA Holiday Party Returns to the North Metro

Thanks to Buzz and Kathy McDermott who have graciously offered to open their home and host the 2011 MASA Holiday Party. Buzz and Kathy live at 12003 Isanti Street in Blaine. The tentative date is Saturday, December 10. **Please be sure to check the MASA website at [masa-rocketry.org](http://masa-rocketry.org) for all of the latest Holiday Party details.**

**Congratulations Chris Feld  
HPR Level 1 Cert Flight  
PML Callisto on an H128  
10 Oct 2011**



## Challenger II Clone Build

By Brian Uhlenkamp  
NAR 39505 SR



I'll give you a little history on this clone build. I'm a true BAR. Back in the mid 1980s, I decided to purchase and build my first "D-Powered" model rocket, my choice was the Estes® Challenger II (kit #1330). I had just built the AstroCam 110 and the Challenger II was advertised in the Estes catalog as being able to launch the camera as well. I thought that would be a great addition to my small fleet at the time. So, I built it, launched it twice I think, losing it in a corn field and was never able to launch it with the camera on it.

This past winter I was paging thru an old 1984 & 1985 Estes catalog and saw the Challenger II and it brought back the memories of the excitement of building and flying my first "D-powered" rocket, even though there is nothing real special or exotic about it. So, I started looking around for repro/clone kits and found none. I even searched my obvious sources of SEMROC (<http://www.semroc.com/Store/scripts/ClassicKits.asp>), Ye Old Rocket Forum, Jim Z Plans, etc. and couldn't find the original instructions, etc. I was able to find the decal template from Ye Old Rocket Shoppe (<http://plans.rocketshoppe.com/decals.htm>). Upon some detailed internet searches, I finally found the plans scanned in from another rocketry club forum (Tripoli Louisiana) that had some plans for the Challenger II. (<http://estesplans.larocketryforum.com/1330%20challenger%20II.pdf>).



From the instructions, I could determine the parts list. This gave me the nose cone and tube length, however, since it had a one-piece plastic fin unit, I had no way to determine the actual fin size, so all I could do was try to scale it the best I could off the instructions.

Since the plastic fin unit was no longer available, I wanted to build this clone somewhat realistic by using plastic vs. balsa.

I've wanted to use some clear plastic fins for a future build, so I thought this was a good chance to verify the building concept I had in mind, since this time I could just paint the fins and it would mimic the original plastic fin unit. I purchased a sheet of 1/16" polycarbonate (Lexan®).

Upon determining all parts and dimensions, first on my list was to verify it all using RockSim. My main concern was the added weight of the 1/16" polycarbonate fins vs. the original plastic fin unit design. I came up with a predicted stability static margin of 1.07 when loaded with heaviest engine (E9-6).



I took the RockSim fin part and cut the polycarbonate using a good pair of tin snips, making the edges true and square. I also did a Wall (TTW) installation, however, I did not add the little gusset at the top of the fins as the original had. I carefully laid out the slots on the tube and cut the fin slots in the tube using a Dremel®.

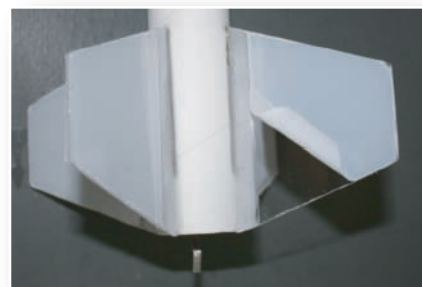


I fabricated the engine mount, and used a Kevlar® cord attachment to the engine mount for the shock cord vs. the standard Estes style shock cord mount. After installing the engine mount, I could begin fin installation. I removed a portion of the protective coating from the polycarbonate and sanded the gluing points. I used 30 minute epoxy for gluing. I used CA at the top and bottom of the fins to hold the fin in

place while the epoxy set. I also used 30-minute epoxy for the fin fillets.

I then installed two 1/4" launch lugs vs. the original 3/16". I prefer using the 1/4" for D+ power, especially when I might plan on putting an APCP motor in it someday.

After completion, I removed the rest of the protective coating on the fins and gave a light sand to the fins and the entire rocket for the final paint prep. I used Rust-Oleum® Painters Touch® UltraCover 2X



white primer, then final coats of Gloss White, then Gloss Black on the fins, and Gloss Marigold on the nose cone. After printing out my decals, I installed the decals and gave a final coat of Rust-Oleum Painters Touch UltraCover2X Gloss Clear Coat.

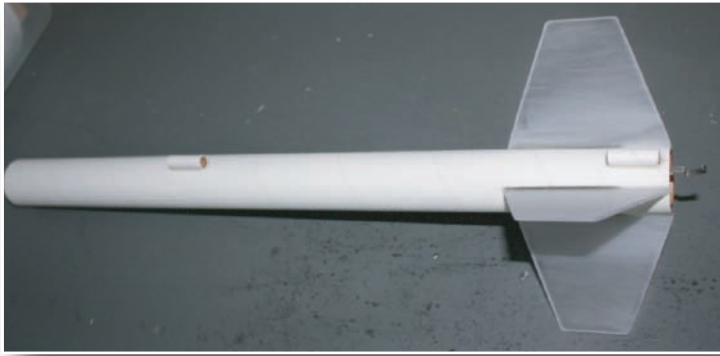
After final completion, I took the final weight (4.4 oz.) and determined the actual CG (16.25") vs. my estimated weight (3.3 oz.) and CG (16.16") in RockSim. I wasn't concerned about the minor move in CG. The overall weight was prob-



**Continued on the Next Page....**



# Challenger II Concluded



ably due to the epoxy use and also that paint wasn't included in the original analysis, it actually made the model slightly more stable. I then reinserted the actual weight and CG into RockSim and re-ran the engine simulations. This gave me a stability static margin of 1.31 with an E9-6 (the heaviest engine). All other sims were between 1.3 and 1.6.

I installed an elastic shock cord to the Kevlar® mount and then installed a NOMEX® chute protector and an 18" diameter 1.1 oz. Thin-Mill Nylon parachute from Top Flight Recovery.

My completed clone turned out just as I remembered the Challenger II, with some nice upgrades such as the engine mount can handle an Estes D and E engine, 1/4" launch lugs, an upgraded shock cord system and a high quality parachute.

I was able to launch my Challenger II clone for the first time at the August MASA launch using an Estes D12-7 engine. The flight and recovery was absolutely perfect and it is ready for flight again. I hope to enjoy it for many more flights and I'll try to keep it out of the corn field this time around. 🚀

Challenger II Clone  
Component Sources:  
[Tube](#) Estes BT-56  
[Nosecone](#) Estes PNC-56A  
[Engine Mount](#) Sunward  
24mm x 4" (added an Estes  
engine retaining clip)  
[Parachute](#) 18" TFR Thin Mill  
#PAR-18TM  
[Nomex chute protector](#) TFR  
#FCP-6x6  
[Kevlar/Elastic Shock Cord](#)  
SEMROC  
[Fins](#) McMaster-Carr



# MASA PLANET

## MASA Member Spotlight

The Who's Who



**JEFF  
TAYLOR**

Name: Jeff Taylor

Born and Raised in: Reno, NV

Currently Resides in: Coon Rapids Age: 48

Attended Sparks High School, Sparks, NV

Favorite Subjects in School: Geometry and Drafting

Current Occupation: Design Engineer

First Job: Media Distribution Specialist (a.k.a. paperboy). Then I worked in a restaurant in the MGM Grand in Reno where I once made a sundae for Barbara Eden.

Children: Two daughters, Alyssa and McKenna

Brothers & Sisters: Two brothers. I am the middle child.

US States Visited: 42 of them, and the remaining 8 are on my bucket list.

Other Countries Visited: Canada and Mexico if you count border towns.

Favorite TV Shows: The Big Bang Theory and Modern Family

Dream Vacation: Almost anywhere

Favorite Musicians: The Classics like Boston, AC/DC, Van Halen...

Favorite Recreational Activities: Camping and hiking or just walking around in Minnesota's North Shore State Parks

Favorite Spectator Sport: NASCAR Sprint Cup Series Racing

If he could go back in time, the historical person Jeff would most like to meet: The first guy that thought it would be a good idea to set sail from Europe on a hand-made wooden boat into the vast unknown of the Atlantic Ocean using the stars for his GPS.

Human's Most Significant Invention, Endeavor or Accomplishment: The Apollo missions to the moon

Something Very Few People Know About Jeff: I have stood next to an M1A2 Abrams Main Battle Tank when it has fired the main 120mm gun. POW!

Biggest Pet Peeve: People with pet peeves.

If Jeff Could Live Anywhere in the World it Would be: Anywhere that never uses the term "Wind Chill".

Other Hobbies Besides Rockets: Drawing

Involved in Rocketry Since: I flew rockets for a little bit as a kid in the late 60's and remember igniting the motors with a fuze and a match. I returned to rocketry in 2005 to find that things have changed a bit.

Favorite Rocket: Probably my high power 5.5" diameter Fat Boy

Current Fleet Size: More than I could ever fly. I love building probably more so than flying.

Fleet Size Sacrificed to the Rocket Gods: Actually very few

Biggest Advantage to Being a Member of MASA: Having a place to go to get answers and advice and to learn.

Has Attended: 2 NARCONs, 1 NSL and 2 NARAMs

Most Challenging Build so far: Semroc Saturn 1B built in just a few weeks that was used as one of the table centerpieces at the 40th Anniversary Celebration of Apollo 7 in Texas.

High Power Certification: NAR Level 1

On Jeff's Rocket Wish List: A Sirius Rocketry Saturn V



## 38mm "CINCO" Saucer

By Ken Jarosch

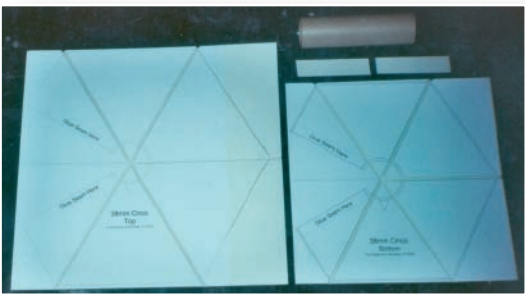
After building many of the Art Applewhite rockets, including 13mm, 18mm, 24mm, 29mm Hobby and HPR, I thought it was time to move into the larger 38mm rockets.

At that time this included the 10" Delta Saucer, 10" Cluster Saucer and the 12" Original Saucer. The 12" Green Original Saucer is one of my favorites. But it has a rather limited range of motors.

We have the 13mm and 18mm paper CINCO rockets. As the name implies, it is a 5 sided saucer. It has a steeper slope to the sides than the Original or Delta saucers, so it tends to fly faster with less resistance.

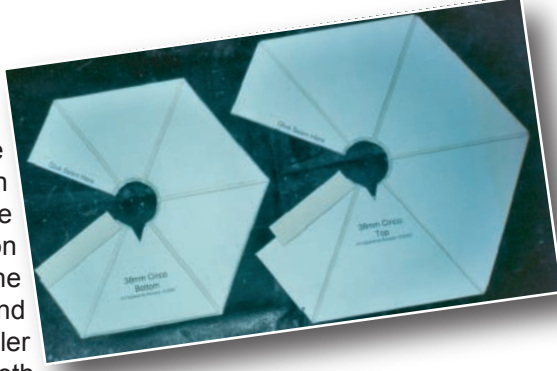
When Art came out with the 38mm foam-board-based CINCO, it was added to my 38mm fleet. It is 11" in diameter, 6" high and weighs 4.2 oz.. The cost is \$35.00. This is a fast and easy kit to build. It only has five parts. Photo #1 shows the printed Top & Bottom 3/16" foam boards, two fiber board seams and the motor tube.

Looking at the photo of the printed sides of the Top and Bottom, you can see how it is to be built.



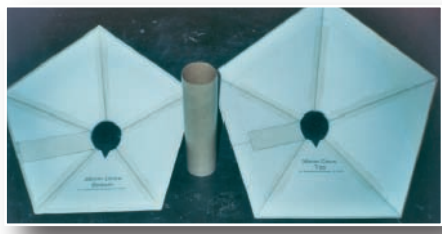
- A) Art has done all of the V-Grooves for you. These V-Grooves allow the foam-boards to be folded.
- B) The seam placement areas are printed.
- C) The outside perimeter is printed on the both sheets. However, the Bottom sheet has a second parallel line just inside the perimeter line. This forms the correct slope to match the Top section.
- D) The two larger inside circles on both the Top and Bottom sections are the cutting slope for the final assembly.

This photo shows the 3/16" foam-boards cut out, sloped and the seams glued in place. Notice the vertical cuts on the outside of the CINCO Top and the inside smaller circles of both sections.



However, in the second larger inner circles of both sections and the outer edge of the Bottom section show the angle cuts for assembly.

Here we see the assembled Top and Bottom sections. Note how the angled cuts now produce a true vertical opening for the motor tube. While the outside edge of the Top section is perpendicular to the plane of the sides, the Bottom outside edge is sloped to match with the Top.



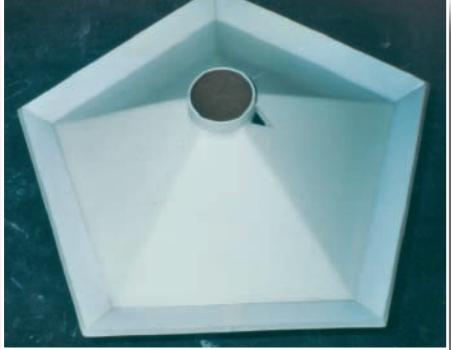
Prior to putting white glue in the V-Grooves, I test fitted both sections together. With a tight and aligned fit, I marked the sides of the Top with a pencil showing the location of the Bottom section. This was the stopping line for the glue prior to final assembly.

After filling the V-Grooves with White glue, I have two solid piece units that match perfectly. I then covered these joints with 30 minute epoxy. I went all the way to the edge of the Bottom section, but stopped short below the pencil line in the Top section.

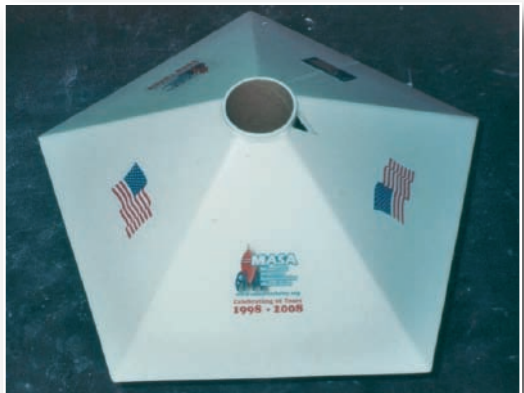
I glued the motor tube into the Top section and dry fit the Bottom section into place to hold the alignment. When dry I removed the Bottom section, filleted the motor tube and the Top section joint with the epoxy. Then the bottom end of the motor tube, area around the pencil line, the sloped Bottom edge and the remainder of the Top V-Grooves was epoxied.

The pre-fitted Bottom section was placed into the receiving Top section.

This photo shows the perfect fit from the bottom view. All joints are given a final epoxy coat, including the motor tube and Bottom section joint. Note, the precise solid fit of the two 5 sided pieces. All exposed foam edges were white glue coated. The triangular cut-outs in one side fits a 1/4" rod.



I had placed the motor tube just outside the Top section to provide room for an epoxy joint. I just decaled the Top and used Acrylic sealer for the top coat.



**Continued on the Next Page....**



## CINCO Continued

This photo shows the completed CINCO with the AeroTech 38/360 RAS (Reloadable Adapter System) "Special". That system included the AFT closure, 38/360 casing, two adaptor spacers, the floating delay/ejection well closure and the forward ring closure.

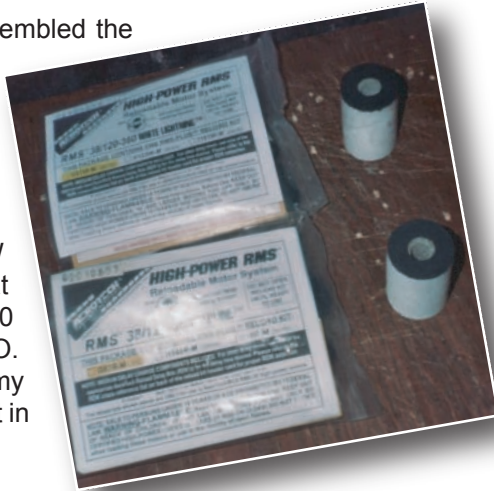


This new hardware was the basis of the CINCO flights. Since the CINCO can fly any 38mm motor with an average thrust of 50N to 250N, that covers G,H, and I motors. With the 38/360 RAS Special, I could cover all the range of this rocket with just one hardware unit. Also, that kept the CG forward.

Putting the reloads together involves a lot of loose parts. There have been failures if care is not taken in assembly. Parts can and do move.

Starting out, I pre-assembled the fuel, liner and forward insulator into a single unit using CA.

This photo shows the pre-assembled G61W and G67R. Both great motors in the 38/360 RAS and the CINCO. Both are some of my favorites for this rocket in small field flying.



This is a great side shot of the CINCO on the pad at TRA-MN (North Branch) launch. Note how the 38/360 fits the rocket. The motor has the G61W in the full length 38/360 casing.

The white rocket with the G61W was a great flight. The long burning White Lightning motor produced a large plume with lots of smoke.

## MASA PLANET



Another day at another field. At the MASA launch at Nowthen field the CINCO was loaded with a G67R.

The CINCO lifts off with the G67R redline. This shot shows how well the CINCO and the 38/360 RAS works with 'G' motors.

CINCO at a MASA launch loaded with the first 'I' motor. The CINCO on a windy day with the I161W motor. Up, up and away.

### FINAL INFO:

The CINCO has flown with a G61W, G67R, H123W, H148R and the I161W. All in the 38/360 casing using the RAS Special hardware. Still waiting are the I218R and I245G motors.

So this 5 sided saucer has a wide range of motors. The Aero-Tech 38/360 RAS Special matches that range. These two (rocket and hardware) are a perfect match.

NOTE: This rocket also comes in the 29mm version for F, G and small H motors with a range of 20N to 150N average thrust. It is 9" in diameter, 4.5" high and weighs 2.7 oz. The 29mm rocket sells for \$25.00. Yes, I have the 29/240 RAS "Special" also.

One final note: I fill the 3 gram ejection well with wadding and tape it closed. I also grease the forward end of the delay element. This of course, is to prevent field fires.

Ken Jarosch  
MASA 148  
NAR 56442  
TRA 10290



# MASA PLANET

## 2012 MASA Officer Nominations

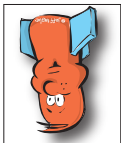
Nominations for 2012 MASA officer positions opened at MASA's October meeting and remain open until November 30th. Nominees will have until December 10th to accept their nomination and become a candidate, or decline their nomination and have their name withdrawn. Nominees do not become candidates until they accept their nomination. Voting will be held at the January 2012 meeting. Nominate yourself or a fellow club member by sending an email to current president Carol Marple (who will not be seeking re-election in 2012) at [masarocketry@rocketmail.com](mailto:masarocketry@rocketmail.com) or post your nomination on the MASA Yahoo Group. Reminder: MASA officers must be current NAR members and MASA members.

Current nominations as of November 10 include:  
 President - Neal Higgins (accepted)  
 Vice President - none  
 Treasurer - Gerald Meux Jr.



### Contributors to this issue of the MASA Planet.... Thank You!

- Ken Jarosch
- Buzz McDermott
- Gerald Meux Jr.
- Jeff Taylor
- Brian Uhlenkamp



## 2011 Launch Windows

### Subject to Change

Check MASA Website or Yahoo Group for updates

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

### MASA November Launch

Saturday, November 19 (one week earlier than normal due to Thanksgiving) - 10:00 am to 1:00 pm

Location: Elk River VFW

Theme: Let it Snow - winter-themed rockets  
 - "Snowball" Drag Race

### A Final Word....

## Wanted: New Planet Editor

This is the 14th year that the MASA Planet has been in existence and I am very proud to have been a part of that long-running tradition by being the MASA Planet editor since I started Volume 10 back in 2007. This issue of the Planet is my 28th issue and it is also my last. As of now I have officially retired as the MASA Planet editor. It is time for the Planet to get a new look and a new editor. Contact MASA's President Carol Marple at [masarocketry@rocketmail.com](mailto:masarocketry@rocketmail.com) if you are interested in taking over as editor. The time commitment required is completely dependent on you, and you don't need any graphic skills or special design software. I would like to specially thank everyone who contributed in the past 4 years and made my job easy! Thank you! - Jeff



ADDRESS SERVICE REQUESTED

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