



Volume 21, Issue 4

## Dallas Area Rocket Society ("DARS")



Member - National Association  
of Rocketry ("NAR").

Special points of interest:

- "Ignition!"
- Moon Day 2012 Coverage!
- Stuart Powley takes a look at rebuilding a PML scale bird!
- Do you want to be in print? Page 9 tells you how!

### Ignition! By J. Stuart Powley



*John Dyer helps eager young rocketeers assemble their Estes Alpha III models at Moonday 2012 at the Frontiers of Flight Museum. DARS has participated in the event for several years now, and our booth is always a highlight of the show.*

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Here we are nearing the end of yet another Texas summer. There has been some pretty good rocketry related activity going on, however, and launches have been happening regularly. I assume.

I say "I assume" for two reasons: first, I haven't actually been able to attend a launch since March. Second, nobody has sent me any material about the launches for the newsletter. Therefore that leaves me in the position of having to suppose that things are going well...I hope...

That also leaves me in a bit of a lurch as far as this hallowed tome goes. You may notice that the newsletter is noticeably thinner this issue. The reason is simple: I got nothing'. Other than a story I threw together about

Moon Day and a quick write up of a project I did in early summer, there ain't nothing' here. In the past I have been able to use pictures of recent launches to fill in, but we have already beat that horse.

So (he said, trying not to sound too grumpy) just let me remind you that I need stuff to put in here. If there is no real interest in the newsletter, I will do the best I can, but remember that if you don't contribute, you don't get to gripe.

So take the next thirty seconds to check out this addition and then start thinking about things you can add...PLEASE!

## Moon Day 2012!

By J. Stuart Powley

NAR 29573

DARS once again participated in Moon Day at the Frontiers of Flight Museum. Moon Day is an annual event that promotes space exploration and honors the history of the space program.

Organizations from all over Texas are invited to set up booths and hold demonstrations for the public, in areas such as robotics, astronomy, and, of course, rocketry.

as usual, very enthusiastic and nobody got glued to anything. The kids were also given a membership to DARS as part of the deal, so we should start seeing them at events soon!

Suzy Sprague, Greg Collins and others manned the booth and fielded questions from curious passersby. There were also quite a few comments of the "Hey, I

the answers. Yes Virginia, these are not just "toys."

The Frontiers of Flight Museum is the perfect venue to host Moon Day, as it is also the home to Apollo 7 (as well as many other groundbreaking and historic vehicles) They have artifacts from areas as wide ranging as the space program to the Hindenberg. A relatively new addition to the collection is the "Flying Flapjack" experimental



*The DARS booth at Moon Day 2012. Note the wide variety of models represented!*

Once again this year, DARS held a "build it and take it" class for kids that wanted to get their feet wet in the hobby. John Dyer headed up the class with help from several other DARS members including his son, Michael. The kids were,

used to do this when I was a kid!" variety, and each time they were encouraged to do it again! Other questions were of the "How high do they go," and "How fast do they go" variety and there were always astonished looks when they got

craft. John Dyer threatened to get in and try to take her for a spin, but I'm not at all sure he would fit in the tiny cockpit!

All in all it was a great day with great friends for a great cause. If even once

person gets more interested in space exploration because of something they saw, then maybe the stars are that much closer. Many thanks to all of the volunteers and we hope to see even more next year!

*Random Shots:*

*Top: Suzy works the table as John's coffee kicks in...*

*Bottom: The Flying Flapjack!*



## The PML D Region Tomahawk Restoration Project!!

By J. Stuart Powley

NAR 29573

Ever so often DARS will have auctions of donated rocket stuff. The proceeds go for various causes such as helping former members, doing outreach, and other noble pursuits. At one such auction I picked up a built, flown, crashed, and rebuilt PML D Region Tomahawk for a good price. I promptly put it in my rocket room and sort of, kind of started planning on bringing it back to its former glory.

After about a year I pulled her out and started doing some serious planning. The Tomahawk had lived a hard life prior to our relationship and therefore had a fair amount of baggage. She had no launch lugs or rail buttons, her motor mount was loose (apparently from a rather hard impact), her piston system was gone, as was her chute, her paint was scuffed and marred (and not prototypical) and, perhaps worse of all, her length had been cut down by about six inches. (probably from the same impact that loosened the motor mount) In short, she was a mess.

However, she had her bright spots too. She came with a 38mm to 29mm motor adapter, her fins were intact, her nose wasn't too badly scuffed, and her bottom tube was in great shape. There was promise here.

The first thing I did was to order replacement parts from PML. I got a new top tube, shock cord,

brass launch lugs and 48 inch chute. Now I was ready!



*A brass launch lug is installed*

I installed the launch lugs first. After scuffing up the brass and sanding the spots on the body tube I used a generous amount of epoxy to tack them into place. After that had cured, I made epoxy fillets to further strengthen them.

Next, I tackled the motor mount issues. It was easy enough to tighten it back by putting epoxy on the end of a stick and feeing it inside the body tube to the top of

the mount. I also re-epoxied the bottom of the mount. Now I had to figure out how to install an active motor retention system, as she had none.

I went to my local rocket store (Home Depot) and found a couple of electrical connectors that, when bent with bolt cutters, worked great! I drilled out and installed three inch sections of threaded tubing and installed matched thread machine screws. The end result certainly seems



*The new active motor retention system*

strong, although I also plan to friction fit the motor as well.

Next came the top tube. As you can see in the picture, the old top tube was not only too short, but has a rather interesting interpretation of what the paint scheme was supposed to look like. It got chucked. I carefully cut the new tube to length and then referenced my "Rockets of the World" book for the proper paint scheme.

my angle on the leading edges, sealed them with Fill N Finish and then grabbed the epoxy. It was

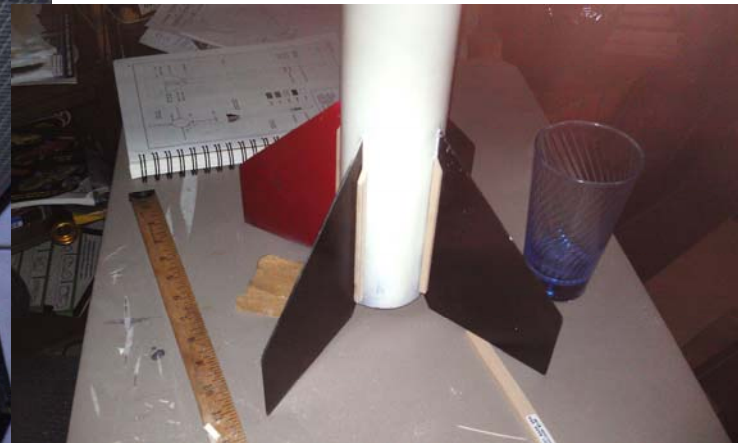


*Left: Test fitting a fairing*

*Bottom: The fairings after being glued in place.*



*The old top tube. It really was of no use to me so its now in my junk pile. Who knows, it may live again as another project...*



While looking at the Allway book, I noticed another design feature that I wanted my model to have. I really like the fairings that run along the fins on the prototype, and while I didn't feel like trying to replicate the entire fin can, I thought that I might be able to at least add that bit of additional detail.

A quick trip to Hobby Lobby provided me with some 1/8 inch basswood that looked like it would do the trick. I cut it to length, set

actually a little tricky to add them since there were already some pretty good sized fillets on the fins, but I made it work. I actually think they probably added quite a bit of strength to the fin area, which is never a bad thing.

I then installed the coupler and shock cord hardware to the new top tube. I used a u-bolt and swivel arrangement and placed it on top of the coupler so that the only way it can pull loose would be if it pulled the entire coupler out. It should be plenty secure.

I then installed the new shock cord. The hefty nylon strap is a far cry from the old Estes rubber bands of death! You could probably literally tow a car with it (for a little while anyway)

Now it was time to focus on the paint. I wanted my Tomahawk to be as close to the prototype as possible. It was clear that a complete repaint was going to be needed, so step one was sanding everything down. That's a lot of sanding. I didn't take all of the old paint off, but I wanted to scuff it up enough for the new primer and paint to stick well. Of course the new top tube had to have the

grooves filled, and then primed. This was actually pretty easy, which just goes to show you that working with new parts is easier than refurbishing old ones.

In order to paint the model more easily (and without a huge amount of spray paint flying around) I decided to build a quick painting booth in the back yard.

I happened to have some four by four foot beaver board panels that I threw together as a makeshift booth. The addition of a two by four on the top for stability and for use as a hanging spot completed the quick project. It worked great!

I painted the model in stages, masking between each one. I used to use newspaper to mask with, but the newsprint can rub off on a model (especially a white one) so now I use plastic shopping bags instead. I painted three fins black, one fin red, put red rings on the top (with a brown one) and put a silver tip on the nose. It's a Pretty easy paint scheme, but I think it looks great!

The next step was to add all those bolts around the payload section. I briefly thought about using real screws, but soon came to my senses. Instead, I used a silver paint pen for eth silver screws and a super fine Sharpie for the others. I think they cam out pretty well. I used my fin pattern program to make sure they were all spaced correctly around the tube.

And that's about it! I plan to fly her with an H242 reload for my level one cert (I actually had my level one, but it lapsed many years ago) I figure that a reborn rocket is a good way to get a reborn certification! Hopefully I'll be able to get to a launch soon!



*The filled, sanded and primed Tomahawk waiting for its first real coat of paint!*



*The rocket hangs in my homemade paint booth. I was really impressed with how much the booth helped in the painting!*



*A close up shot of the simulated bolts and screws. A fin wrap program was very useful for this part of the detailing!*

*Next page: The completed PML D Region-Tomahawk!*





## How to Contribute to Shroudlines

And now for the “last page begging part” of our publication. As I have made clear in the past, without you, we have no newsletter. We all have differing interests and areas of expertise, and that is exactly what this newsletter needs!

Once again, I'd like to thank all of those who have contributed material so far. You are very much appreciated! Still, we need more! Therefore, if you have any kind of article, picture, cartoon, rambling, etc., just send it to [stu29573@yahoo.com](mailto:stu29573@yahoo.com). I usually work best with Word documents, and JPEG files, but I can make just about anything work if I have to. I can also handle stuff that is written down, but that means I have to type and that can be a bit touch and go... But I'll take it anyway!

You can also give me things at the meetings (which I almost never miss...almost), and I promise to try my best not to lose them. I can return stuff at the next meeting if need be.

As I have said many times in the past, I really want this newsletter to be by the club and for the club. You guys can think up much better stuff than I can (as is evidenced by the articles we've been getting lately). So, stop just thinking about maybe writing something and actually do it! You'll be glad you did! (as will everyone who reads it!)




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## DARS Officers

<b>President</b>	<b>Jack Sprague</b>
<b>Vice President</b>	<b>Dave Shultz</b>
<b>Treasurer</b>	<b>Suzie Sprague</b>
<b>Secretary</b>	<b>Bill Gee</b>
<b>NAR Senior Advisor</b>	<b>Sam Barone</b>

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# DARS

The Dallas Area Rocket Society is a non-profit chartered section of the National Association of Rocketry (“NAR”). Its purpose is to promote the hobby of consumer rocketry in the Dallas/Ft. Worth metropolitan area.

Membership in DARS is open to all interested persons. Membership in NAR is encouraged, but not required. Annual dues are \$10.00 for individuals and \$15.00 for families. The entire family, including children, are welcomed to the meetings. Go to the website and fill out and send an application to join or renew your membership.

The club normally meets on the first Saturday of each month at 1:00 p.m.

Visit the DARS website for the meeting location: [www.dars.org](http://www.dars.org)



Stay connected! All of us will reach greater heights with your attendance at the club meetings.

Vendor Links (\* DARS member discount—confirm before ordering)

[Aerospace Specialty Products](#)

[Apogee Components](#)

[BMI Hobbies](#) (\* 10%)

[CLE Enterprises](#)

[Excelsior Rocketry](#)

[Hawks Hobby](#)

[JonRocket](#)

[Mercury Engineering Co.](#)

[Public Missiles Ltd](#)

[Quest Aerospace, Inc.](#)

[Red Arrow Hobbies](#)

[Roadrunner Rocketry](#)

[Semroc Astronautics Corporation](#)

[Sunward Aerospace Group Limited](#)

[RC Zone](#) (\*10%)

[Aerotech Consumer Aerospace](#)

[Art Applewhite Rockets](#) (\* 20%)

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[Dr. Zooch Rockets](#)

[FlisKits, Inc.](#)

[HobbyTown USA— Dallas, Walnut Store](#) (\* 10%)

[MadCow Rocketry](#)

[Pemberton Technologies](#)

[Qmodeling](#)

[QuickBurst](#)

[Red River Rocketry](#) (\* 8.25% on field)

[Rocket.Aero](#)

[Sirius Rocketry](#)

[The Squirrel Works Model Rocketry](#)

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("DARS")

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[WWW.DARS.ORG](http://WWW.DARS.ORG)

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