



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

Special points of interest:

- "Ignition!" Spring is in the air!
(and so are rockets)
- James Turner gives us the low-
down on the Red River Rocketry
"Merlin."
- George Sprague explains his
method of preventing shock cord
related failures
- FYBOO '10 is in the record
books and here is the scoop.
- Bill Gee provides some fantastic
FYBOO pictures as well!

Ignition! By J. Stuart Powley



Ken Overton poses with his home built burn rate test chamber. Ken is one of our high power and experimental rocketry gurus, and his chamber is quite ingenious. If you come to a meeting he can explain it to you much better than I can!

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Here we are once again with a wondrous Texas spring upon us. Of course what that really means is that its windy and rainy. Still, we are getting birds in the air fairly regularly, so all is right with the world.

The meetings have been well attended and interesting lately. It seems everyone has something cool to bring and show off to everyone. Ken Overton brought the item pictured above recently. Although I might have the name a bit wrong, I think I have the purpose down pretty well. It's a great piece of engineering!

In this issue we have some good stuff. First, James Turner did a kit review on

Red River Rocketry's Merlin. He did a great job on both the rocket and the review!! Next George Sprague lets us know his method of prolonging the life of his models. It's a great idea! Finally we have the results from FYBOO '10, and some of Bill Gee's really cool action pics from it.

Speaking of contests, I'd like to remind everyone of DARSTAR 7 coming up on May 29th and 30th in Windom. The events are A Streamer Duration, 1/2A Parachute Duration, 1/2A Boost Glide Duration, E Dual Eggloft Altitude, and F Super Roc Altitude. You can pre-register by following the link on the contest page of DARS.org. We hope to see you there!

fillets and is not nearly as complicated as the systems with other rocketry kits. I modified one item on the motor mount. I added positive motor retention by using JB Weld to attach a #8 piece of all-thread to the motor mount assembly. *Image 4* is the parts in the mount kit and *image 5* is the assembled motor mount assembly.

Next I had to seal the fins, transition, and nosecone. Once sanded and sealed, it was time for the main assembly. The first step is to install the motor mount into the heavy duty booster body tube. This body tube has the fin slots laser cut in it, so just align the fin slots on the motor mount with the fin slots in the body tube. Once the epoxy had cured, I installed the three fins.

Next, I installed the assembled baffle system as described in the instruction manual.

Now it was time for the assembly of the payload section. I modified this slightly by using removable rivets to attach the transition and nosecone. The rivets used are available from PML's website (<https://blastzone.com/pml/>) They are \$2.95 plus shipping for a bag of 24 rivets.



Image 4. The motor mount assembly kit.



Image 5. The assembled motor mount.

HDWE-RVT-NAT Reusable Plastic Rivets:
 Ideal for mounting removable couplers in airframes, securing hatches and securing nose cones to payload sections. 24 rivets to a package.

- Holds securely to kraft phenolic, fiberglass, plastic tubing and nose cones
- Once holes are drilled, no tools are required to install the rivets. To remove the rivets, pull cap up with your fingernail or small knife
- Eliminates wood backing strips that screws require
- Will not strip hole
- Low profile (less than 1/16")
- Rivets are intended for combined material thickness from 0.100" to 0.130"
- DRL-5/32 drill bit sold separately

Shown larger than actual size

I used these because I think in the future this payload section should be just right for a Booster Vision wireless camera and I will need access to the payload bay.

I marked the guide lines on the payload section so I could drill the six 5/32 inch holes required for the removable rivets. I used the blue masking tape in *image 6* to keep the drill bit from peeling up any of the payload bay body tubing. Once the holes were drilled, I soaked the transition and nosecone holes in super glue to strengthen the balsa wood.



Image 6.

Now the rocket was ready for its finish. First I filled the spirals in the body tubes. These were not that deep, so it went fairly quickly. Once the body tubes were smooth, a good primer coat was applied. Once this was dry, I wet sanded with 320 grit sandpaper and then put on another coat of primer. This was repeated four times until I was satisfied with the smoothness. The time and patience spent here will be reflected in the final finish.

Now that the rocket was in primer, I made a small modification to the paint scheme. I kept the color scheme of a white booster section, black transition, red payload section and blue nosecone. For the red and blue I used a metallic paint. I thought a nice addition to the paint scheme would be to incorporate some stars into the Merlin scheme.

First I laid down the basecoat colors I wanted the stars to be. I used a metallic purple on the booster tube and silver and gold on the fins and payload tube. When this was dried (minimum of 24 hours) I applied some star templates that I purchased. Just a note if you try this. I learned not to use paper stickers. Use vinyl stickers instead. The paper stickers tend to soak up the final colors and peel up a bit.

Once the star templates were in place, I sprayed the final colors. This took 4 coats of each color. After the last coat dried completely (minimum of 24 hours), now it was time to remove the star templates. This ended up

taking hours to do. I had to take an ex-acto knife and cut the paint around each star to keep from peeling up the top coat of paint. After this was done I applied the water slide decal and the monocothe metal bands for the payload section.

Now it was time to apply the clear coat finish. I applied the clear coat in very light coverage. I applied six or seven light coats, let this set up for 24 hours, wet sanded one last time, and applied the final coat of clear. This one is a heavier coat. I applied the heavy coat until I got a finish that looks "wet". Once this last coat had dried completely, I added one coat of wax to protect the finish. Below is a picture of the finished rocket.

I would recommend this kit to anyone that wants to start out in mid-power rocketry or add to an existing fleet of rockets. I am very happy with the way the finished rocket looks. The maiden flight is scheduled to be at the Frisco launch in April (weather permitting).

I would again like to thank John Dyer for supplying a high quality kit that I really enjoyed building.



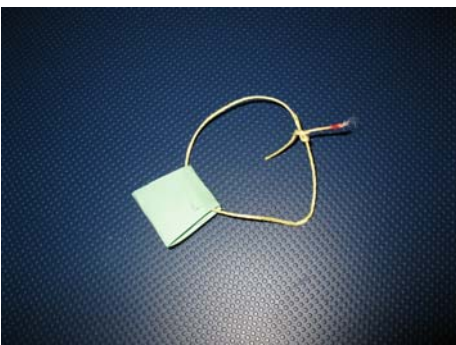
Shock Cord Tips

By George "The Other" Sprague

There you are, just finished applying the last decal to your latest model rocket creation. This bird looks great! Ready to fly! But dang, the thought of having to replace that shock cord if (and you know if you fly it often you need to replace it) and possibly tearing the body tube makes you cringe. What, still using the ancient glue the cord to the mount and then to the inside of the body tube method?

I like to replace my shock cords after every three flights. Its cheap insurance that minimizes the chance of the thing breaking during deployment event. Elastic material is quite inexpensive and can be found at fabric stores and of course places like Wally World. Here are a two ways I use to attach the shock cord, and be able to replace easily, without affecting the body tube.

The first method involves using the "fold over twice" shock cord mount, usually included with the kit, but instead of gluing the cord to it, I use a loop of Kevlar cord, 10 lb strength works just fine. I tie a square knot, then apply cyanoacrylate (CA) glue to this knot, then trim the excess strands. The knot goes outside the mount. See below. (Large items used for clarity)



You want to make sure the loop will extend at least an inch from the opening of the body tube; this will make it easier to attach the elastic cord. I place the nose cone next to the opening of the body tube, lip resting on the opening, and measure where the mount needs to go inside the tube and what size loop I need. Then, after the Kevlar loop is made and attached to the mount I glue the mount inside the tube at the proper location.

I find this works well with small diameter model rockets. For larger diameter rockets I use a different method. First, I reinforce the centering rings by cutting out rings from 1/8 inch thick balsa wood, then gluing to the paper ring included in the kit. This also provides more surface for glue to adhere to the body tube.

Then, I make a mount for the Kevlar cord from piano wire or a paper clip to go on the top centering ring. I carefully make two holes for the "legs" of the mount to go through. I bend the ends to help hold the wire in place. See Picture 2. I secure the bent parts to the ring with epoxee glue.

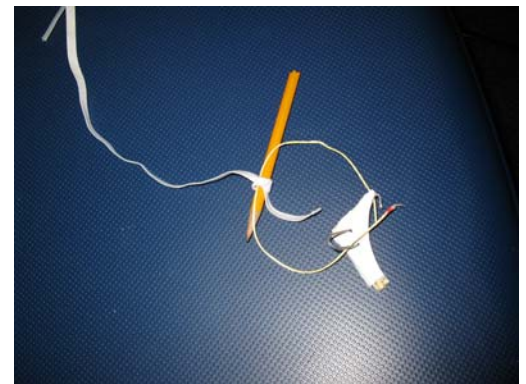


Picture 2

Once again I measure how long of a kevlar loop I need and tie and glue that to the wire anchor. Why a loop instead of a single strand? Contrary to popular belief, Kevlar sometimes fails. It's happened to me twice. If you notice strands shredding on any portion, you can cut the kevlar cord, tie one end of the new cord to the old one, then thread it through. Works great for body tubes that are long or you just can't get to the mount.

After all this is done I tuck the loop into the motor tube then glue the assembly in the rocket. Then it's just a matter of fishing the loop out when you are ready to attach the elastic cord.

Now to attach the shock cord. I like to use a length of cord at least twice as long as the body tube – this reduces stress on the cord during the ejection event. See Picture 3.



Picture 3

Again, the size of the items is large in order to provide a clear view. I use a small dowel and tie

the knot around that, this makes it easier to cut the knot for removal. Picture 4 shows the finished product, model is a Neubauer Rockets 1/100 scale Gemini Titan. I am using a wire shock cord mount attached to the centering in this rocket.



Picture 4

By using either of these methods you will be able to remove the old shock cord with ease, and fly that great looking model rocket over and over again! Provided you recover it, there are no mishaps, rocket eating trees...you get the idea. Just remember: the pointy side goes towards the sky.



More of George's very protected rockets!



George poses with his Gemini Titan. It's a really cool model that should be around for a long time thanks to his shock cord ideas.

DARS FYBOO '10 Results!!!

On January 16th and 17th DARS had it's latest installment of the "freeze your buns off" series of contests; the DARS Freeze Your Buns Off Open. Actually, the weather wasn't too cold at all and although the ground was a bit soft on Saturday, it had dried perfectly by Sunday. The wind on Saturday was light, and Sunday was dead calm. It was, therefore, a perfect time to fly a contest!.

John Dyer did a great job of being the contest director and obviously he also did a great job of flying because he got first place overall. Chas Russell came in second overall, Jack Sprague came in third and Gary Briggs took fourth. Gary's accomplishment was especially noteworthy since this was his first NAR competition! (see last month's newsletter for his feelings on the experience)

The rest of the places were:

D Helicopter Duration

- 1st- John Dyer
- 2nd- Chas Russell

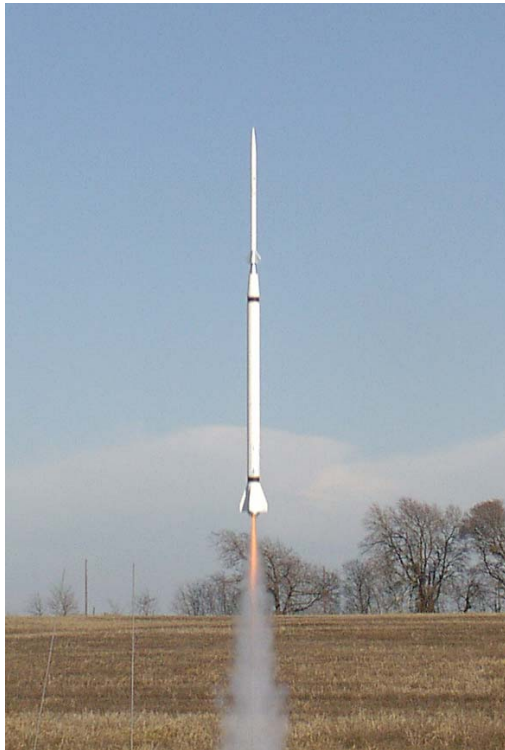
1/2 A Boost Glide

- 1st- Jack Sprague
- 2nd- John Dyer
- 3rd- Suzy Sprague
- 4th- Sam Barone

Giant Sport Scale

- 1st- Chas Russell
- 2nd- John Dyer
- 3rd- Gary Briggs
- 4th- Ace Disaster Company

Bill Gee took these great pics of FYBOO '10. (and many more) I will identify what I can!



Both John Dyer and Chas Russell entered Loki Darts. I'm not sure whose this is, but its nice!



Gary Briggs captured third place with this fine example of an Exocet. It got extra points for using two engines!

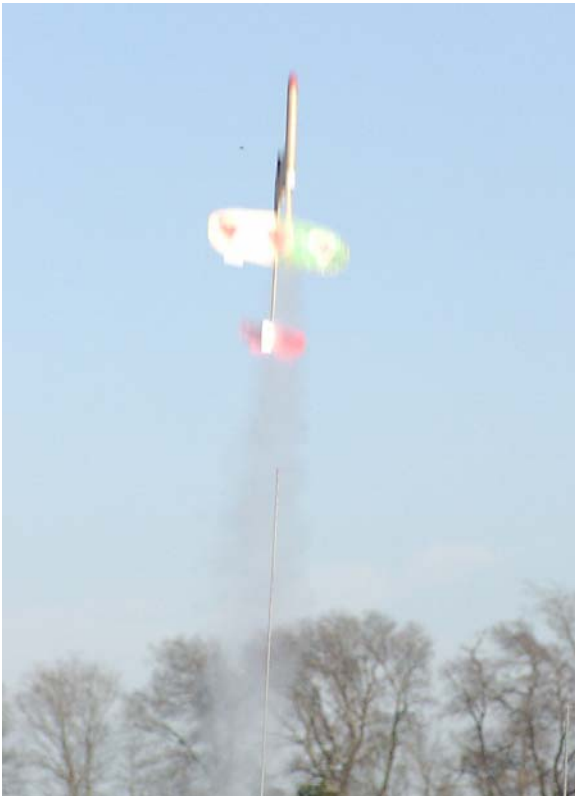
The Ace Disaster Company (aka Stu and Laurie Powley) got fourth with their Astrobee D under F power.



Although it didn't place, James Turner's Standard ARM was beautiful!



Jack Sprague captured first with this 1/2 A Boost Glider.



I'm pretty sure that this is Suzy Sprague's third place boost glider....pretty sure....



I'm also pretty sure that this is John Dyer's first place D Helo bird. If its not, its Chas'....

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. 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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Vice President	John Dyer
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Secretary	Bill Gee
NAR Senior Advisor	Sam Barone

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



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

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