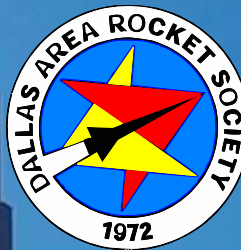


SHROUDLINES

A Dallas Area Rocket Society Production

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Ignition!

By Gary Briggs

The last couple of months I have actually spent more time on rockets than at any time in the last 18 months. The new job feels like it might be settling into a rhythm and I have a little more time on the weekends anyway. That being said, I am falling into some old habits that could be trouble. Repair versus build is always a struggle for me as I try to determine the shortest path to putting something new together or putting something old back in the air.

Right now, the bench consists of the following rockets, with plenty of others in the wings.

- WAC Corporal rebuild from salvaged parts
- Sirius Rocketry Interrogator repair due to bench damage
- Astron Avenger fin repair.
- TLC Exocet fin and nose repair
- Maxi-Brute Honest John update from 3/16 to 1/4 lugs and adding a coupler to the nose cone.
- Deep Space Transport new build.

With all the repair and modification work the DST was a nice distraction as a new build. It required some cutting of balsa and it seemed like it had been a long time since I had done that. A little balsa therapy from time to time is good for the soul and certainly takes me back to a different time.

The DST was kind of the follow on to some other activity around what I refer to as the Scorpion Project.

This started out simply enough. I have become fond of the Centuri Super Kits of the mid 70s after building the USS America and the ESS Raven for Fall Classic events. The SSV Scorpion has always been the Holy Grail of that set as it has sooo many fiddly bits all of which were made of Fiber Board, Centuri answer to balsa shortages(??). When I started thinking about things I wanted to build, that one came way up on top of the list.

Regardless of why they used the stuff, without some mechanical means of cutting it, getting good clean edges on all of those parts manually is a pretty tall order. I have told the tale of my Raven parts many times, about Carl McClawhorn cranking them out in duplicate for me without really knowing what went on behind the scenes. I fired off an email to John Dyer to get his thoughts on who could potentially cut this stuff for the Scorpion based on his connections with many manufacturers. His response was obvious, but not where my head was currently at. His suggestion was to get with Bill Gee and all those wonderful tools at Makerspace.

I contacted Bill and he was pretty quickly onboard. He posted part of our dialogue on DARS general and David Bellhorn jumped in. The first problem to solve was how to get from the scans of the patterns found online to clean files that could be used by a laser

cutter. Bill and David went back and forth on this for a couple of iterations, and recently David has produced a file that provides single line patterns that work well for the laser. I love it when a plan comes together, or in this case some luck finds the right resources and people with a similar interest and capability...

This issue we have multiple contributors for your viewing and reading pleasure. First up is Ted Macklin and his wonderful Guillotine Fin Alignment Jig. Many members may have seen this device online without realizing that they were conceived and manufactured right here in our backyard. Ted also has a special offer for DARS members that you will be interested in. Next up is Jack Poehlman who describes his recent misfortune to have 2 CATOs in 1 day. The pictures are spectacular! Next, Sam Barone shows us his techniques on building his Level 2 rocket; a LOC Doorknob. George Sprague finishes up the writing part with his review of the new Jolly Logic Chute Release that has recently started showing up at launches and we finish with some great pictures from various members.

As always, more content is better and they only way we get more is if you contribute it. With spring arriving, I know there will be lots of new projects hitting the air. Take a bit of time and share your experiences with everyone.

Bill's Something #18 - Competition rule changes once more

By Bill Gee

Is it too early to propose a radical modification to the competition rules?

If you look at the currently proposed changes, there is an item to "standardize events" in order to increase participation. So just how is this supposed to work?

As far as I can tell, the rationale is that participation can be increased if a potential contestant does not need to build and maintain such a large fleet of competition models. Right?

Why don't we take this line of thinking one step further...

Repeal Rule 9.9 of the Pink Book:

9.9 Construction

The RSO or his/her deputy shall make every reasonable effort to ensure that each contestant has completely constructed the model rocket(s) he/she uses in competition. Model rockets not requiring construction shall be excluded from competition. Materials and design may be obtained from any source, including kits.

Or at least alter it to require the contestant to do his own construction work only in craftsmanship events in which that skill is an integral part of scoring.



Here's an example of what Bill is talking about. For this particular event I was flying sport scale, egg loft, streamer, parachute and boost glider duration events. With spares, the number of rockets can really add up.

We already allow entries to be flown by proxy in most events. In many performance-oriented events, atmospheric conditions often play a more important role in winning than the design and construction of the model and those allow proxy-flying. Why not complete the process and allow models to be built by proxy in those events?

If someone can purchase or otherwise obtain "last year's model" from another contestant and suddenly become competitive, why not let him?

He is more likely to fly events he might not attempt otherwise. If a beginner can fly more events by buying or borrowing someone else's completed rockets, why stop him?

If it has the potential to get more people to try competition, we should give it a chance...

If you would like to discuss this further, post your comments to the DARS-General

Yahoo group at [http://](http://groups.yahoo.com/group/DARS-General)

groups.yahoo.com/group/DARS-General where I like to hang around.

Contest Commercial

Megalaunch 2016 in Frisco—March 12

- B Helo Duration
- B Rocket Glide
- B Parachute Duration
- C Streamer Duration

DARSTAR XI in Frisco—May 28, 29

- Plastic Model Conversion
- 4 A Cluster Altitude (altimeter)
- A Boost GLide
- A Helo Duration

The Guillotine Fin Alignment Jig

By Ted Macklin

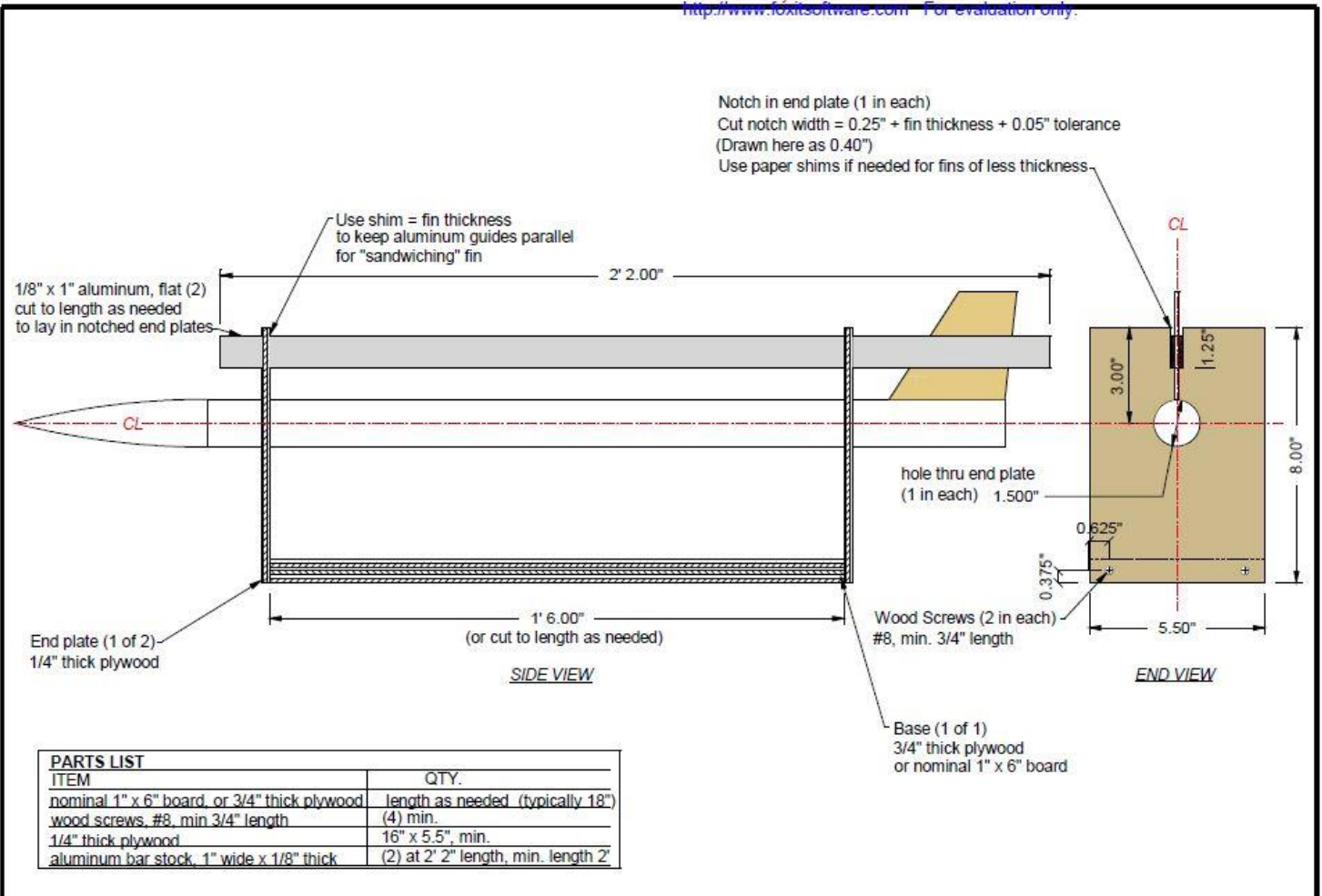
I am occasionally asked how I came up with the design for the Guillotine Fin Alignment Jig which is marketed by Apogee Components of Colorado Springs, Colorado. The short answer ...boredom! The long answer follows.

Working with my wife in our independent pharmacy in Denton, Texas from 1996 until 2013, we were either swamped with work or watching the clock tick until closing time. During the slow periods my mind would wander, especially on the beautiful blue bird days when I longed to be outside. It was during those slow days that I would doodle on paper the thoughts

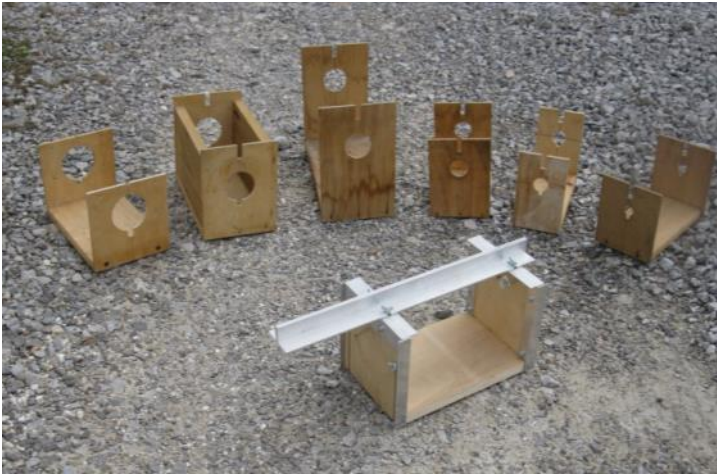
rattling around in my skull about better ways to build model rockets. In particular I was not satisfied with either the methods or products available in 2007-8 to assist me in attaching fins to model rocket body tubes. So I set about building something for myself that might better suit my own personal needs. Necessity truly is The Mother of Invention!

My first attempts at a building a better fin jig resulted in the idea of a simple base with a circular hole in an end panel that mirrored itself on the opposite end panel into which a body tube could be inserted.

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In addition, a rectangular, vertical slot would also be in each end panel which would accommodate a pair of flat, aluminum bars which would provide a method by which longitudinal fin alignment could be accomplished. It worked like a charm but had a number of disadvantages.



First, I would need a different fixture for each and every body tube diameter and this number is virtually without limit. I could make the holes slightly larger than the diameter of the desired body tube, but this would require the addition of masking tape to keep a given body tube centered in the holes. And if the device was being used to repair a painted rocket with a broken fin, it might not fit into the holes. Then there was the problem of using the aluminum flats, as they were easily bent and had to be shimmed with paper or cardstock in order to center fin thickness. I made quite a number of these fixtures (photos) and it soon became apparent that I would need a larger shop with more shelving. Mission Creep!

But I knew I was on to something and became obsessed with finding a workable solution. Then one particularly boring day I had the idea of an adjustable aperture, like the iris in a film camera. But how? An iris is a rather complex and challenging thing all by itself. Scratch that. There must be another way.

Then I had my light bulb moment: two opposing V's sliding against each other and thus trapping the body tube within. I drew some layouts, first

out of paper and later out of the cardboard backer panels that came with our printer label sheets. This concept soon evolved into one end panel being fixed within a framework and another panel overlaying it and adjustable.

During the horrible Texas heatwave in 2011, I built a wooden prototype out of scraps and took a series of pictures that appeared on Rocketry Planet just prior to Darrell Mobley's passing. When my son Charlie first saw my device he said that it was something special and that I should try to market it through one of the established hobby firms. I later contacted Doug Sams of Plano and asked him if he would come up to my home in Van Alstyne and film me demonstrating my invention. He graciously accepted and produced this video (<https://www.youtube.com/watch?v=7084iPzEwLs>) which I soon forwarded to Tim Van Milligan of Apogee Components who immediately sent me a purchase order for six units. I haven't had a moment's rest since!



Since the fall of 2011, I have made over 400 of these babies in two sizes. Only the first few were of the open sided design like the prototype and all subsequent versions have been in the familiar box form. In the summer of 2014 I contracted with Nat Kinsey of Upscale CNC who now makes my end panels using his CNC router.

The point of this little trip down memory lane is simple. If you have an idea, pursue it tenaciously and see what happens. You can build a better mousetrap!

Editors note: Here are a few more pictures of this ingenious device. It looks like a real time saver and simple and effective solution to a repetitive process that can easily make or break your rocket (quite literally). Ted will be offering 3 of his original designs to DARS members for a discount price. Make that 2, as I will be grabbing the 1st one! To see what else Ted has in the works, check out <http://www.macklinmissileworks.com/>



CATO x2!!

By Jack Poehlman

The DARS Frisco Sport Launch, January 17, 2016, started out as a cold morning with overnight temperatures just below freezing. Some say that may have contributed to the Poehlman-Kaufman families E9 CATO's.

Connor (6) attempted a flight of his Estes Super Neon XL with an E9-6 motor. A spectacular catastrophic event occurred a few feet off the rod as the Estes E9-6 motor ejected itself. Burning propellant blew through the motor mount, body tube, and tube fins causing enough shock to part all 6 fins that were attached to the tube fins. Unfortunately, only the top section of body

tube appears to be salvageable, however Estes has already replaced this rocket for Connor along with a 3 pack of E9-6.

Owen's (4) Mega Mosquito faired a bit better when an E9-4 also had a CATO on the rod. The E9-4 appeared to blow out both ends as it parted from its casing. Fortunately, the only damage to the Mega Mosquito was the nosecone attachment loop was broken off and a minor burn of the nylon parachute as the propellant traveled through the rocket. The Mega Mosquito seems to tempt fate as it had a failed deployment at the December launch to resulted in a 3 inch core sample of





Conner pushing the button and Owen waiting for his turn

the soft soil.... Once removed it flew again that day! Estes did not have any Mega Mosquito's left, so Owen chose a Estes SLV to try to get Dad to build and share with the family.

Both packs of E9's had a date code of 06 28 11 which based on the input of others on the Rocketry Forum appears to have a higher failure rate than other date codes. Interesting to note that one of the replacement packs of motors that Estes shipped to was a pack of E9-8's with the same date code. Taking suggestions for easy to build, cheap, disposable, fun to fly rockets for these motors.

Sam Barone's L2 LOC Doorknob

Photo's by Sam Barone, Chris Bender, and Frank DeCosimo

My goals for an L2 flight were to use a J motor without electronics. I didn't want to break any new ground with construction techniques or materials so that meant cardboard/wood/ plastic – a big model rocket ! After my usual lengthy search and procrastination I decided the 7.67inch LOC Doorknob fit the bill. I ordered it during the 2014 Black Friday season from Countyline Hobbies and assembled it over several months in 2015.

It flew in August of 2015 at Hearne Texas with the Tripoli Houston club. Robert

“buyrocketmotors.com” Watson provided an Aerotech J460T and fellow DARS members Chris Bender, Robert Vanover, Frank DiCosi-

mo, and Tom Blakeney were in attendance. Great fun and great success.



The next time it flies I'll have it decked out in a nice Sandia Labs “high vis” paint job like the real Doorknobs that took instruments into mushroom clouds in the South Pacific in 1958.

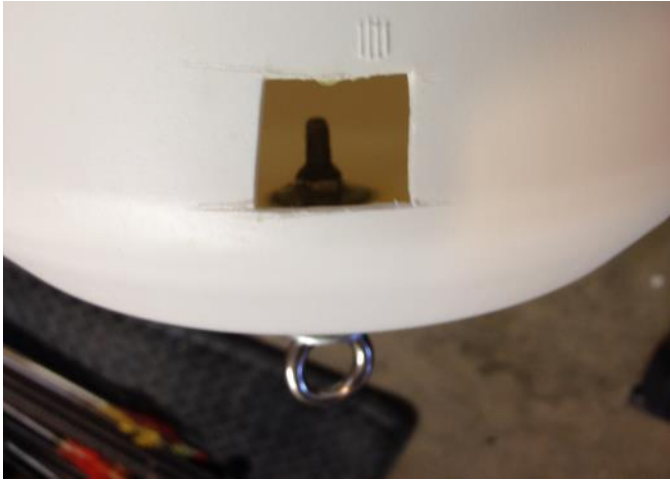
The build started with the nose cone being washed in the sink with dish soap and water. Then a nice rub-down with 80 grit sandpaper. To fill the seam I used Bondo Spot Putty stiffened with a little dollar store CA. Without

the CA I've found that the I can sand the Bondo all the way off too easily.

I decided to augment the molded plastic loop in the nose with nice solid eyebolt. I cut the little window in the shoulder to allow access for a wrench to hold the nut in place as I turned the bolt to tighten it down. I used some duct tape on one side of the wrench mouth then placed nut between the wrench jaws and the tape held it in place. Ladled the epoxy in with a craft stick taped to a dowel. I reattached the piece to cover the hole.



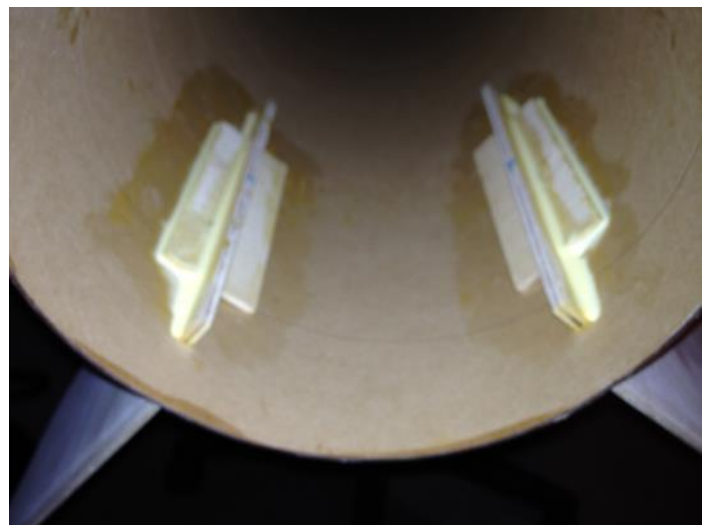
Just a little rounding of the leading and trailing edges.



I used adhesion promoter for the first time on this cone. Then hit it with filler/primer. The Rusto 2X primer is what it flew in.



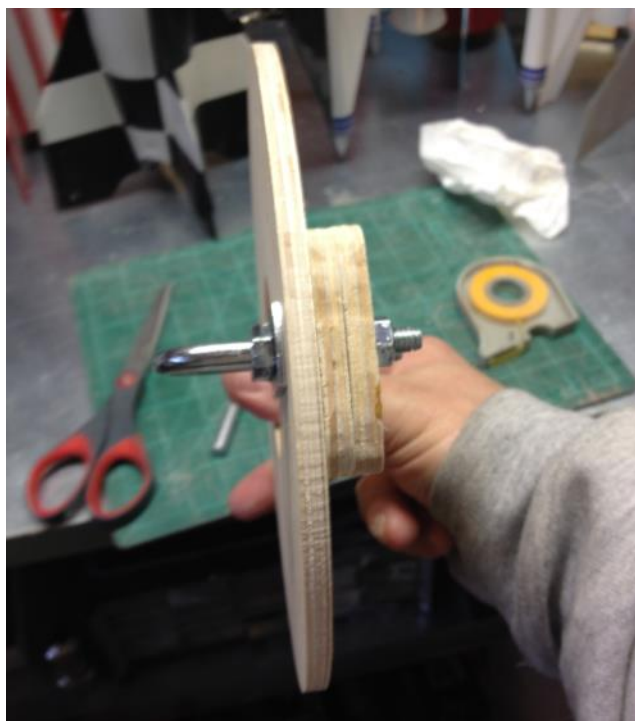
The only negative on the LOC kit was rough fine slots. Cut with a chop saw ?



The famous LOC "not all the way thru the wall" fin tabs.



My idea from the start was to tie the fin tabs to the centering rings by cutting notches in the rings. The two dark areas 90 degrees apart are where the tabs engage the ring. Sturdy. I just had to cut a third ring using one of the kit supplied rings for a template. I glued up the middle ring only to the motor tube after measuring the ring locations (3 or 4 times). I installed this assembly from the top and got the notches in place over the forward end of the fin tabs. Flipped the airframe and got fillets around the inside center ring joints, then installed the aft ring, with the notches just engaging the fin tabs. The forward ring was added last, 7 1/2 inch diameter work space making that job easy



The u-bolt from Elliot's was another upgraded part. Some scrapes from the third centering ring construction provide a solid attachment point for it and the rail buttons



A good height

Editors note: The following are pictures from Frank DiCosimo except for the right middle picture which is by Chris Bender.



Assembling the motor



The completed product



Motor retention



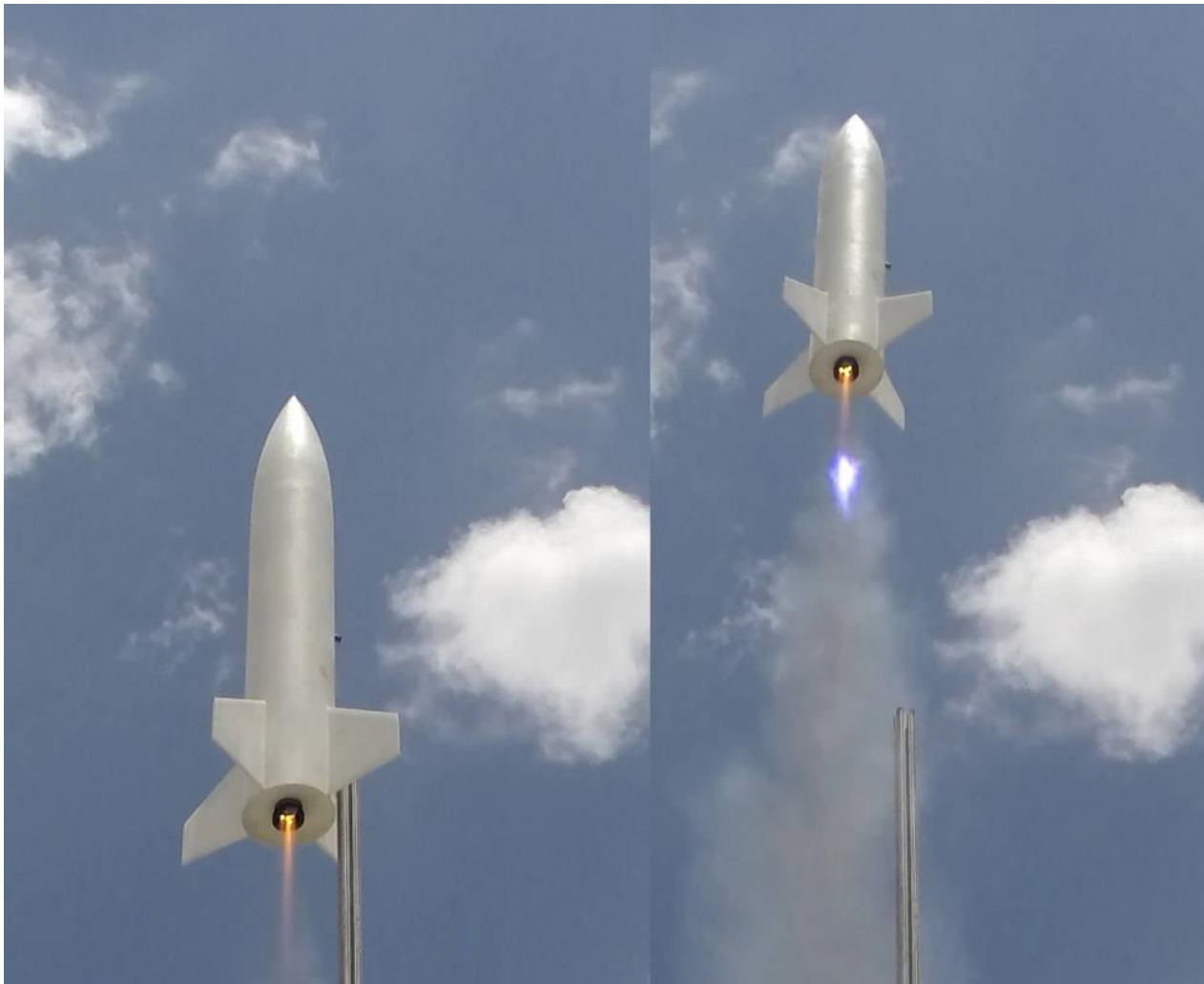


Photo by Chris Bender



Photo by Frank DiCosimo

Jolly Logic's Chute Release

By George "The Other" Sprague, Photos from the Jolly Logic website

Quite the windy day, Saturday, February 20, 2016, at the DARS monthly model/mid power launch. Winds gusting up to 20 MPH. Fliers were getting their exercise alright, walking waaaay out on the field to retrieve their rockets.

A few fliers came prepared, though, sporting a neat little product from Jolly Logic, makers of altimeters and.... the Chute Release. From their website:

Chute Release is a small electronic device that holds your rocket parachute closed until it drops to an altitude that you choose. This is great for windy days and small fields when normally your rocket would drift too far while descending under parachute.

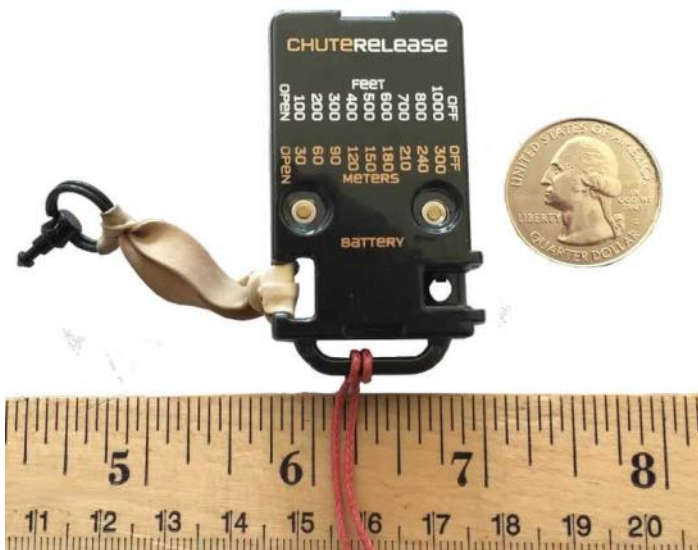
feet (30-300 meters) and you are ready for launch."

Essentially, its an altimeter that releases the elastic holding your folded parachute at the altitude you input into the device. No black powder charges, just an electronic servo that releases the pin holding the elastic in place and lets the parachute open. The unit is powered by a built-in rechargeable battery that can be recharged from any USB port (cable included).



Chute Release worked great on the flights I saw, save for one small diameter rocket. All other uses were in rockets of 2 or more inches in diameter. The mishap in the small diameter rocket, I believe was 1.5 inches in diameter, occurred because the parachute attached to the unit failed to slide out of the body tube – something the flier is looking into to correct.

With a wide array of choices for altitude settings for deployment (100, 200, 300, 400, 500, 600, 700, 800 and 1000 feet) this small device offers a solution for flying a rocket in a small field, windy day, or both, without resorting to dual deployment.



Simply wrap the elastic around your folded parachute and snap it into the other side of the release, then set the altitude from 100 to 1000

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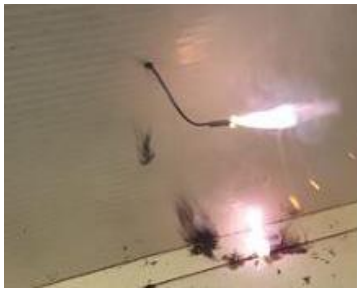
Parting Shots

Photos by Various Artists



Top 2 shots by Jack Poehlman. Bottom 3 shots by Jacob Mehr





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We all share a love for the rocketry hobby and all have different experiences and expertise to share. You don't have to be a Pulitzer Prize winner to write for this publication. Anyone can do it!

Submissions can be in the form of plain text files, emails, or MS Word documents. Pictures can be of most any format, but .jpg files are generally the norm. Keep the content family friendly and free of political discussion; just rocketry.

We publish every 2 months so we need your content submitted by the 15th of an even numbered month (i.e. February 15, April 15, June 15, etc.). You can submit via the contacts page on dars.org or direct to the editor at garyb2643@att.net.

DARS Officers

President	Jack Sprague
Vice President	Sam Barone
Treasurer	Suzie Sprague
Secretary	Bill Gee
NAR Senior Advisor	Chuck Crabb

Upcoming Events

3/5	DARS Business Meeting @ Coppell
3/12	MEGA Launch Contest @ Gunter?
3/19	Monthly Launch @ Frisco
4/2	DARS Business Meeting @ Coppell
4/16	Monthly Launch @ Frisco

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, fill out and send in an [application](#), to join or renew your membership.

The club normally meets on the first Saturday of each month at 1:00 p.m. and the current meeting location is in Coppell, just off the Sam Rayburn toll way and Denton Tap Road.

Visit the DARS website for the meeting location: www.dars.org

SHROUDLINES