

SHROUDLINES

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Jacob Mehr's rocket catches this great view high over the field in Asa.

Ignition!

By Gary Briggs

Four months have passed since the last publication of Shroudlines. It would appear to be a fairly volatile time in the life of DARS coming off of the loss of Frisco and moving into the heart of the flying season with some pretty big unknowns of where and if we were going to be flying. Through the work of several members, 4 months later we have more options than we have ever had and most have been tried out with at least a test launch to see how they will work. What a difference a little time can make.

Two months ago, when the deadline for this publication arrived we had exactly zero new content to publish. The slim pickin's are somewhat

understandable considering the challenges the club was facing, so we took a publication cycle off to let the content develop. In September the stories started to arrive.

What is still lacking, surprisingly, are launch pictures. In the past we often had shots from multiple folks per launch. Since the Frisco shut down there have been exactly 2 Gunter launches documented on Shutterfly and 1 sent out on a Google drive (2 of the 3 are from Jacob Mehr, and that's why most of the picture in this issue are his.). That is since April!

Here's my tip on launch pictures. Although having a great camera with a nice lens will yield better results, the current crop of smart phones take shockingly good pictures, even of fast moving rockets. If your phone supports burst mode, it is just the ticket for catching a lift off. What you do want to stay away from is the digital zoon as that will generally create more issues than it will

be a real looker when it is done and should look great in flight. It started life as a prize from a Fall Classic from The Rocketarium. It then got a set of basswood fins to improve the sanding lines, a more-accurate-to-scale tunnel, improved tail cone and plastic canards and detailing to match the C model. It will be finished off with a set of custom decals with part coming from the kit, some from Excelsior Rocketry, and some I printed on my own.

In this issue Bill get's things going with Something #21 which expands on our great set of choices now available for flying. Things have certainly improved significantly. Following that is a report from Prairie Hill, put together by high power maven and NAR Senior Advisor, Chuck Crabb. From there



The Cavanaugh Flight Museum's P-51 Mustang flying over Gunter. Captured by Jacob Mehr.

help. Zoom in later on your computer where you can tell if you are pushing the pixels too far or not. So don't feel like if you're not carrying thousands of dollars worth of photo equipment that you can't get some good pictures. You absolutely can, and those folks that didn't make the launch will appreciate you for it.

On the build front, I think I need to petition the contest committee for a scale event in the upcoming season. I have been looking at the decals of my unfinished Jayhawk and think I need a good reason to complete it. I think it will

George Sprague educates us, yet again, with information on appropriately balancing your rocket and shows that some of those techniques you use on models can scale up to larger rockets as well. The physics are still the same.

With January around the corner, I would like others to consider being the next editor for this publication. I have enjoyed my run, but think it may be time to pass the torch. Please do let me know if you are interested.

Bill's Something #21 - From Famine to Feast?

By Bill Gee

A few short months ago, our flying field situation suddenly became very bleak: the Frisco site ceased to be.

Now, I'm glad to report that it is much improved. Not perfect, but substantially better than it has been. We now have access to six flying sites with leads on several more.

We have reaffirmed permission from the landowner at Gunter to use the northern portion of his property for a flying field. Depending on the wind, it can accommodate up to low H motor flights. We can still recover on the large part of the field; we just cannot launch from it. This may be our regular winter field when the wind blows out of the north.

We have flown twice now at an undeveloped park in North Arlington. It is rather small and is only good for up to

D impulse, but it is sufficient for outreach and TARC qualification purposes as well as scratching the itch for some black powder action in that part of the Metroplex.

We have also tried out the Sabine Creek Ranch site to the east of Rockwall. It is a nice place with (air-conditioned!) restroom facilities available. This facility handles from D to G impulse depending on the wind. This along with Gunter will be our primary contest fields.

As a result of contacts made at the last Moon Day, we now have permission to fly at the Caddo Mills Airport. It also has restrooms on-site. This

facility has the potential to handle some high-power flights.

Finally, we again have permission to fly at the Prairie Hill Dragway east of Waco. This site can handle some substantial high-power, though we are going to start conservatively until we get established. Restrooms are available and there is pavement all the way to the rangehead.

Meanwhile, Corsicana is still on deck, awaiting a time when crops are not in the field and we are not hindered by rain or burn ban.



Photo by Jacob Mehr

How frequently we use these far-flung locations is up to how many teams we can get to volunteer to host launches. We can certainly build up enough equipment to make it happen.

But we cannot run them all very frequently without additional help.

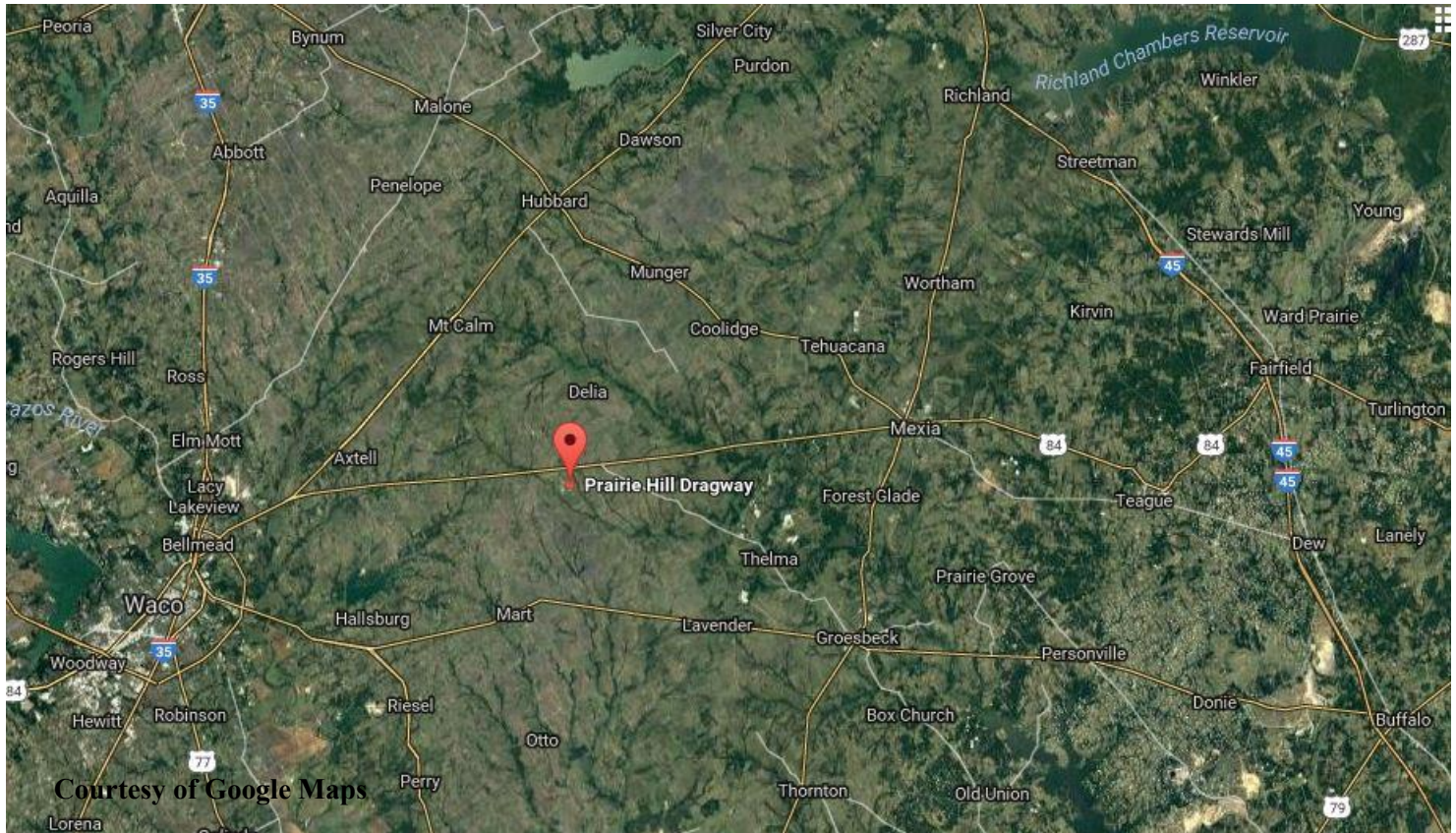
If you still do not find any of these opportunities convenient, we will bring a launch to you if you have a site.

If you would like to discuss this further, post your comments to the DARS-General Yahoo group at <http://groups.yahoo.com/group/DARS-General> where I like to hang around.

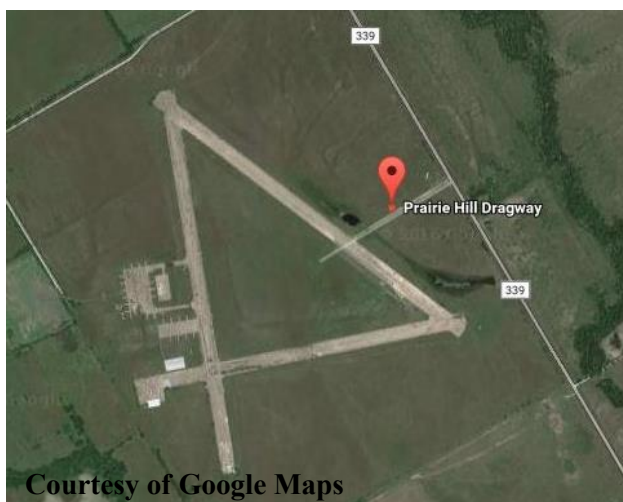
Prairie Hill – New Site, More Flying Fun

By Chuck Crabb

On September 17, 2016, new field located in Prairie Hill was inaugurated, marking a new day for DARS and the Texas high power rocket community. Note I didn't say North Texas. The location of Prairie Hill is approximately 20 minutes east of Waco, making a trip from anywhere in the eastern half of the state doable for a one day launch. Per various mapping programs, travel time from Dallas/Fort Worth is 1.5 hours, Austin is a little under 2 hours, and Houston is a little under 3 hours. Many thanks to Annie Scheidemantle for finding the field and Jeff Jones for getting access



The field itself is currently occupied by a drag strip known as the Prairie Hill Dragway on the eastern side, and a few dozen head of cattle on the west. It formerly housed a truck driving school and began life in the early 40's as Waco Army Airfield #5. The airfield consists of 3 concrete runways, 2 at 4000' x 150' (N-S and NW-SE) and 1 at 3500' x 150' (E-W).



With the site dimensions and available waiver, this field is M capable, depending on where the flight line is set up. There are some obstacles to deal with for recoveries. A tree line exists about a half mile from the western edge of the field, a power line runs along the east-west runway, a few "water features" exists on the site, and a fence blocks access from the NW-SE runway to the N-S runway. Despite these relatively minor drawbacks, the site is great for flying rockets – it's flat, with good visibility for the entire recovery area. Access to the field is via paved roads, and with the concrete runways, rain during the days prior to a launch is a lower concern than the typical flying field. One thing to note – runway

recoveries can be unforgiving, and the grassy areas are a bit uneven (lumpy also comes to mind) from the cattle walking around when it's wet.

The first launch held at the site was a snap launch with a waiver to 10,000 ft. The day featured plenty of sunshine under a partly cloudy sky with hot temperatures and light winds. Overall, it was quite a successful opening. 19 flyers burned 65 motors on 60 flights. Impulse classes A-J were represented, with a total of 6,234 Ns flown. Multiple categories of rockets were flown; the normal 3, 4, 5FNC types, clusters, gliders, oddrocs, sport scale and several scratch builds. The light winds made for short recovery walks. 2 flights over 6,000 ft had recoveries within 100 yards, and a couple of flights over 2,000 ft with unintended main-at-apogee deployments had recoveries within a couple hundred yards. As is the case with opening any new field, sacrifices were made to the rocket gods. 2 flights were unrecovered and a third arced over and was last seen headed north by northwest, possibly in search of Cary Grant.



Photo by Jeff Jones

Oddrocs were well represented. Keith Pate flew a scratch built saucer to claim the first oddroc flight at Prairie Hill. Other oddrocs consisted of 3 Art Applewhite kits; a Cinco, an X-Fire, and a Cluster saucer on a 38mm H. Rounding out the oddrocs was Joe Bocclair flying the ACME Sptifire and Nantucket Sound from Fliskits. After all, who doesn't enjoy a flying lighthouse? Other than the lighthouse operator, that is.

At least 3 gliders were flown as flyers began practicing for the upcoming Bob Wilson Memorial contest (see the DARS contest page for more info).



Jeff Jones' Go Devil 38 rips off the pad on an I245 Mojave Green (photo by Jeff Jones)



Kevin Patton's L1 liftoff and recovery (photos by UNT NASA SLI)



On the high power side, 14 flights were completed ranging from high power G motors to J. Kevin Patton achieved his level 1 certification using an Aerotech H135 in a PML AMRAAM for a picture perfect flight. Due to his rocket landing next to the low power pads, he had to carry his rocket to the far end of the runway and back for the proper recovery experience to complete his L1.

The UNT NASA SLI team was in attendance getting some pointers and asking questions. They also took the opportunity to pose with some of the rockets brought to the launch. One of them made the comment “This is so much better than watching on YouTube!”.



All in all, it was a great day to be out flying rockets. Prairie Hill is a great site with a promising future for rocket flying. A large, open space with easy access and a great waiver that's close to home – it doesn't get much better. I look forward to seeing you at the next launch.



Mike Sebesta's LOC IV/Upscale Executioner



George Sprague's LOC Caliber ISP

Photos above by UNT NASA SLI team. Photos below by Chuck Crabb



Chuck Crabb's Red River Rocketry Scorch Upscale liftoff ...



...and recovery



Views from onboard Chris Bender's Ventris (photos by Chris Bender)

A Well Balanced Rocket

By George "The Other" Sprague

Have you seen the September/October issue of Sport Rocketry? Did you look at the pictures first, then decided the words might be good to look at also? Well if you did, you probably saw, on page 52, "The Cato Chronicles, and the subject is model rocket stability.

The author, Leslie Houk, makes some very good points regarding rocket stability. Mentioned in the article are terms we should all be familiar with, such as Center of Pressure (CP), which is the single point on the rocket where aerodynamic forces act. Center of Gravity (CG), the weight of all the rocket components act through this point.

Also mentioned: most kits are stable – one has to be careful with certain designs that require nose weight. I would like to expand this to large model rockets (mid power), and especially high power rockets. With these, especially if one is seeking high power certification, it is imperative that the rocket not only be stable, but also documented as to how this stability was determined.

Once the CP is determined (there are several rocket software programs that do this) and marked on the rocket, the CG can be determined by ye old method of preparing the rocket for flight (motor, hardware, electronics, recovery system etc.) then hanging the rocket from a stout string or thin rope or strap and shift the rocket until it is balanced – that point of balance is the CG.

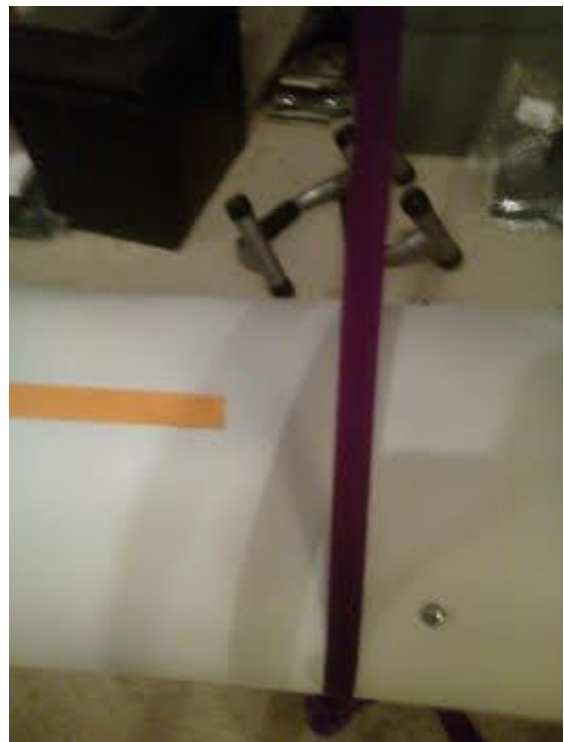
How far ahead of the CP should the CG be? At least one *caliber*, which is equal to the diameter of the body tube, ie if the body tube is 4 inches in diameter,

the CG should be at least 4 inches in front of the CP. If it is less than this, one way to move the CG is to add weight to the nose cone. If it is way more than this, you have an over stable rocket, and that brings its own problems when flying on windy days, mainly that tilt, or weather cocking. So 1 to 1.5 calibers would be good, give or take a fraction.

Would you believe I used this method on my Level 3 rocket? Tons of fun handling an almost ten foot tall rocket, 10 inches in diameter, M motor, fully prepped for flight and balancing that thing on a strap! (See picture –the orange tape is 10 inches long, one caliber.)

One final idea: here is an easy, simple to use, blast from the past program that will allow you to easily calculate CP. It came out long ago, it's called Winroc, and here is one source:

<http://www.drmoore.org/Winroc/winroc.html>



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Parting Shots
All photos by Jacob Mehr







Here's one last shot from Prairie Hill. Note that the cars are parked on the runway and the distance to move your gear is really tiny. That is a wonderful thing when the ground might be slightly damp. Photo by Jeff Jones

How to Contribute to Shroudlines



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

11/5	Business Meeting—Coppell
11/19	Monthly Launch—Gunter
12/3	Business Meeting—Coppell
12/17	Monthly Launch—Gunter

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