Issue 643 / January 14th, 2025

PEAK OF FLIGHT NEWSLETTER

Apogee Components, Inc. / ApogeeRockets.com / Colorado Springs, CO

Applying Rivet Surface Details to Model Rockets



PEAK OF FLIGHT NEWSLETTER

Issue 643 / January 14th, 2025

COVER PHOTO



Pieces Used for Our Rivet Testing Featured in this Newsletter

FEATURED ARTICLES



Applying Rivet Surface Details to Model Rockets

by Martin Jay McKee

A detailed guide to adding surface rivets to your model rockets, covering a huge range of techniques and materials.

Apogee Components, Inc.
4960 Northpark Dr.
Colorado Springs, CO 80918
1-719-535-9335
www.ApogeeRockets.com

About this Newsletter

You can subscribe to recieve this e-zine FREE at the Apogee Components website: www.ApogeeComponents.com, or by clicking the link here **Newsletter Sign-Up**

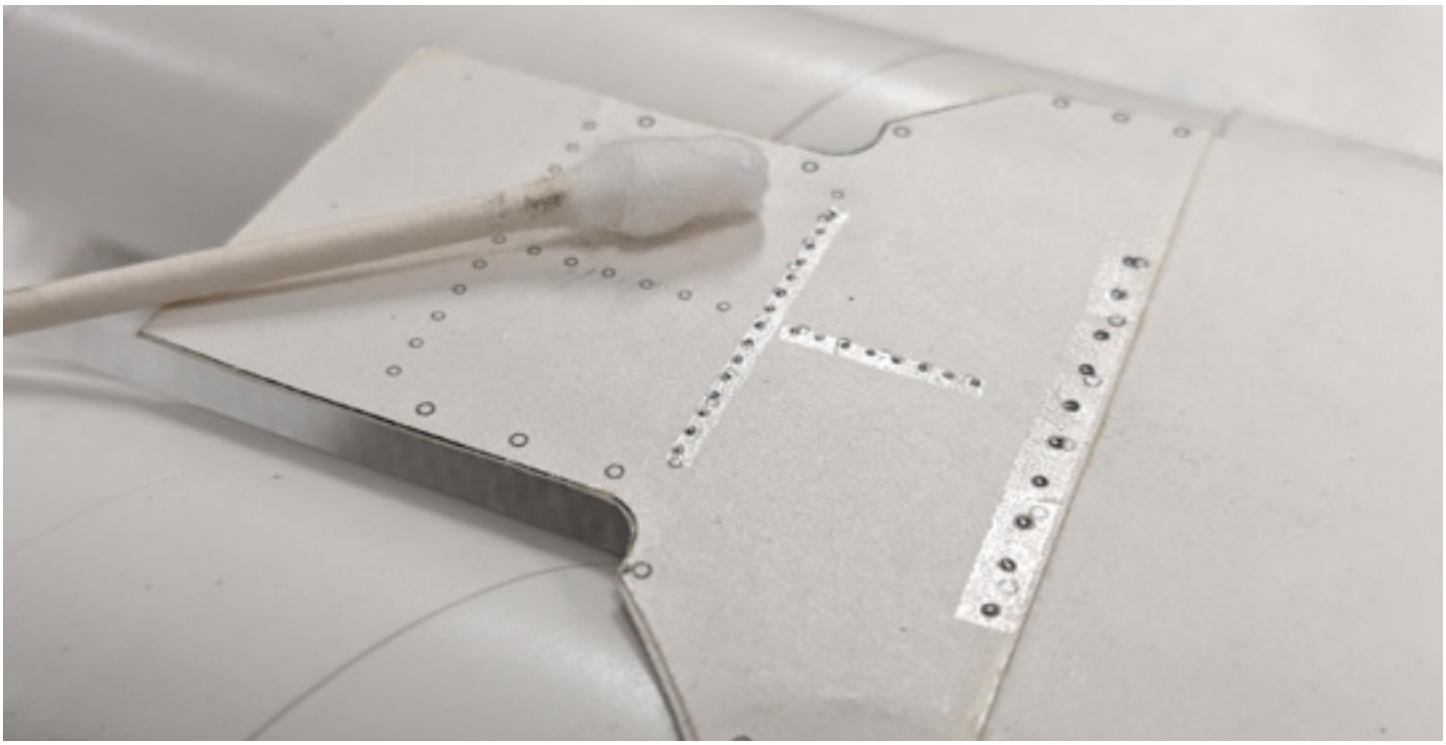
Editor-in-Chief: Tim Van Milligan
Managing Editor: Michelle Mason
Content Editor: Martin Jay McKee
Layout Design: Ogden Sikel

Apogee Rockets Level-2 Kit Launch
on a Dark Matter Propellant Motor
Pueblo, CO



Would you like to see your launch photo featured in the *Peak-of-Flight* newsletter? Submit your photo at apogeerockets.com.

PEAK OF FLIGHT NEWSLETTER
Applying Rivet Surface Details to Model Rockets
Issue 643 / January 14th, 2025
www.ApogeeRockets.com



Applying Rivet Surface Details to Model Rockets

by Martin Jay McKee

With the recent release of the Apogee Nike-Hercules, we have been considering the best way to apply such surface detail to a model rocket. Of course, part of that "best" way comes down to what is possible for a modeler to complete – effectively and efficiently. A process that leads to stunning results but requires materials, skills, or tools that one does not possess is a process that won't be completed. In the case of rivet details, there are techniques that span the gamut from easy to difficult, from time-consuming to (relatively) quick, and from frugal to exorbitant. In this article, we will explore several of these methods which are useful for applying surface detail to not only our Nike-Hercules & Flying Machine but to a variety of other scale and sport scale rockets.

Deviating from our standard (more narrative) article format slightly, each method is presented in a separate section with similar photographs (to allow comparing results) and some generic information about the method. Specifically, each section will list some pros and cons of the method, at least as we experienced it during our testing. Following that, a list of required materials is included. Then a description of the method is presented along with any final notes.

In all cases except for one – direct application of paint on the prepared fin skins – the rivets were applied to a test piece which represents a single side of the Nike Booster shroud. The cardstock parts were stacked and attached to tubes so that the rivets could be tested in the most realistic environment. The surface was then prepared by spraying it with a polyurethane clear coat to seal the porous cardstock. My preferred sealing medium would be a lacquer clear, but the polyurethane was handy, so I used that. While the tube spirals should absolutely be filled before final paint, I did not do that on my test articles in order to save time.

Hopefully, the following tests will provide the reader some useful insight into which methods will be most effective for them. I do not claim to have any particular skill in any of these methods. Indeed, most of them I tried for the first time here and I have never used any of them extensively on a finished product. This was an exploration for myself as much as for anyone else.

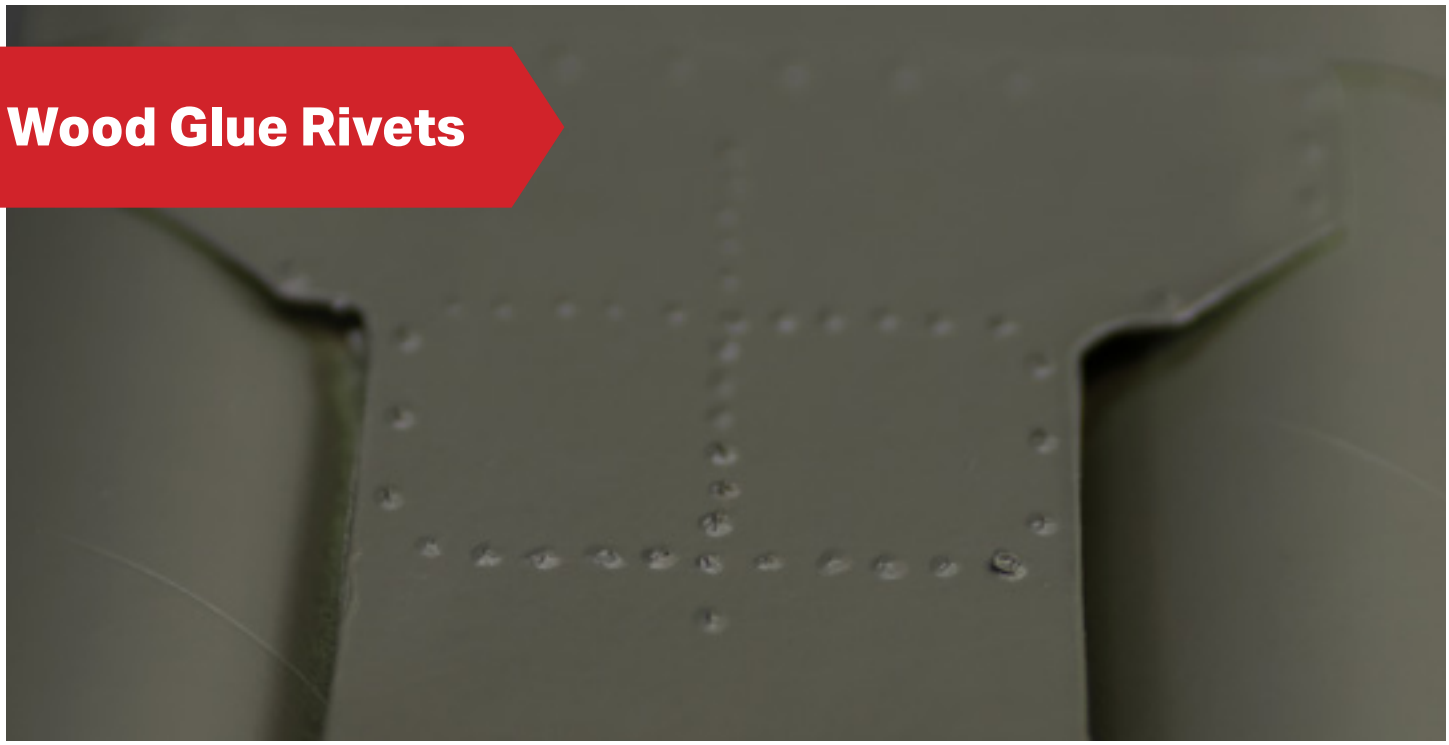
PEAK OF FLIGHT NEWSLETTER

Issue 643 / January 14th, 2025

Applying Rivet Surface Details to Model Rockets

www.ApogeeRockets.com

Wood Glue Rivets



PRO

- Quick and easy to apply
- Inexpensive and non-toxic
- Easy to learn

CON

- Glue shrinkage leads to peaked rivets
- Long drying time
- Difficult to be consistent
- Rivets cannot be adjusted much after the first application

Materials

- Wood Glue
- Needle as Applicator

Method

Dispense a small puddle of wood glue into a plastic cap or tray then dip the needle into the glue and place individual dots onto the target surface.

It is important to practice the application of rivets to ensure that consistent glue dots can be created.

Notes:

The shrinkage of the glue results in almost pyramid shaped rivets rather than the nice domed glue dots that are layed down.

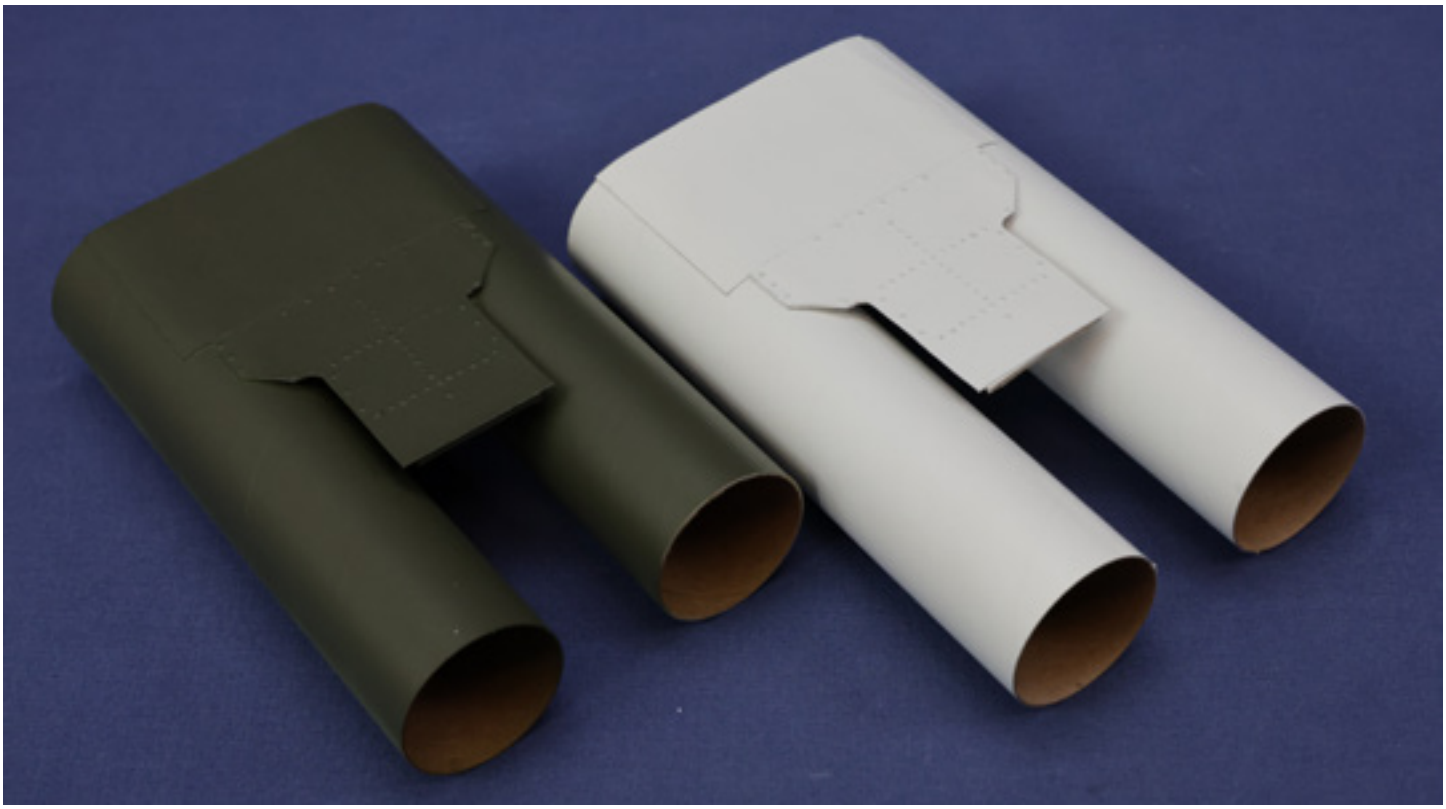
Despite their limitations, wood glue rivets are likely the easiest entry point to adding rivets to a rocket and their cost is negligible. It is a great place to start even though it is not the best method in any particular way.

PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Wood Glue Rivets shown on a Nike Hercules Model Rocket



PEAK OF FLIGHT NEWSLETTER

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets

Thick CyA Rivets



PRO

- Quick and easy to apply
- Inexpensive

CON

- Glue surface cures to be rough
- Difficult to be consistent
- Difficult to see clear glue drops

Materials

- Thick CyA Adhesive
- Needle as Applicator
- Optional, CyA Accelerator

Method

CyA adhesive rivets are applied in exactly the same way as wood glue rivets where a needle is used to transfer small drops of glue onto the target surface. The one difference is that accelerator may be used once the CyA rivets have been placed to fully harden the rivets instantly. The result is a very fast method to apply rivets.

Notes:

The surface of CyA rivets are more round than wood glue rivets, but not as smooth as epoxy rivets. The use of accelerator leads to rougher rivets.

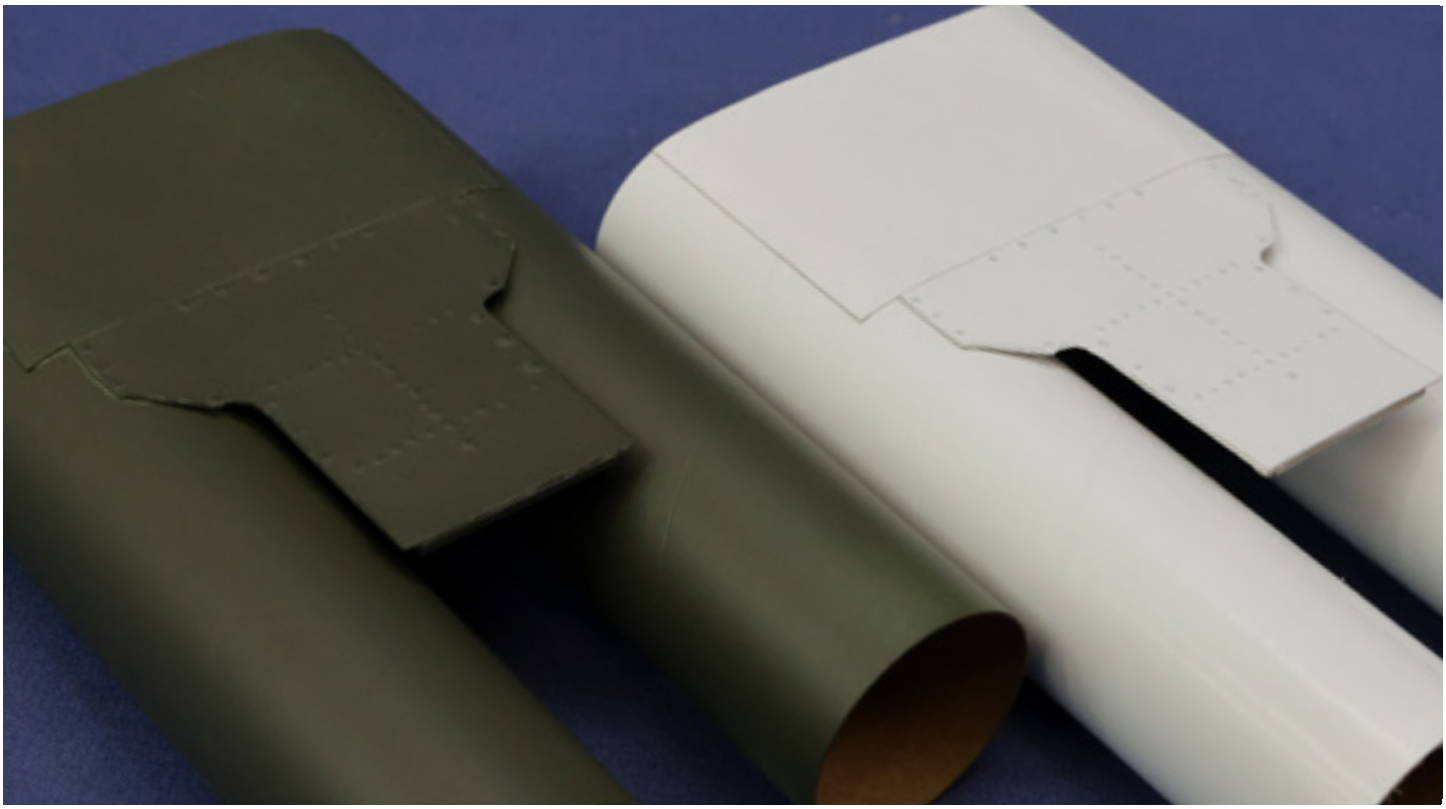
The major difficulty with CyA rivets is simply the fact that the adhesive is clear. Because of the small size of the rivets, it can be difficult to see exactly how much CyA has been placed and where. The result is that it is even more difficult to consistently place CyA rivets than other rivets.

PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Thick CyA Glue Rivets on a Nike Hercules Model Rocket



PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Epoxy Glue Rivets



PRO

- Quick to apply
- Leads to smooth & round rivets
- Inexpensive

CON

- Dots spread post-application
- Long curing time
- Difficult to be consistent

Materials

- Medium viscosity epoxy, such as 'Bob Smith 15-Minute'
- Epoxy pigment, if desired
- Needle, as applicator

Method

To apply the epoxy rivets, mix the epoxy then dip the applicator in the epoxy getting a small amount at the end of the applicator. Press the applicator down onto the surface in the desired location, taking care to center the epoxy rivet & apply a consistent size dot.

Application of epoxy rivets should be practiced on scrap beforehand to make correction for the glue spreading possible and also to become more skilled at consistently applying dots of the epoxy.

Allow the rivets to set on a horizontal surface to at least the green stage (firm and no longer tacky) before rotating the rocket to apply rivets to the next side.

Notes:

The tests were done with G-Flex 650 which is a toughened epoxy with a viscosity slightly less than the 15-minute Mid-Cure epoxy that Apogee sells. It may be better to add a filler such as fused silica to the epoxy to minimize the amount of spread. We also started a test with the significantly thicker G-Flex 655 (which we now carry in the Apogee Components store) and were unable to get decent rivets because the glue formed strings when trying to drop the dots. No doubt, somewhere in the middle of the two would be best.

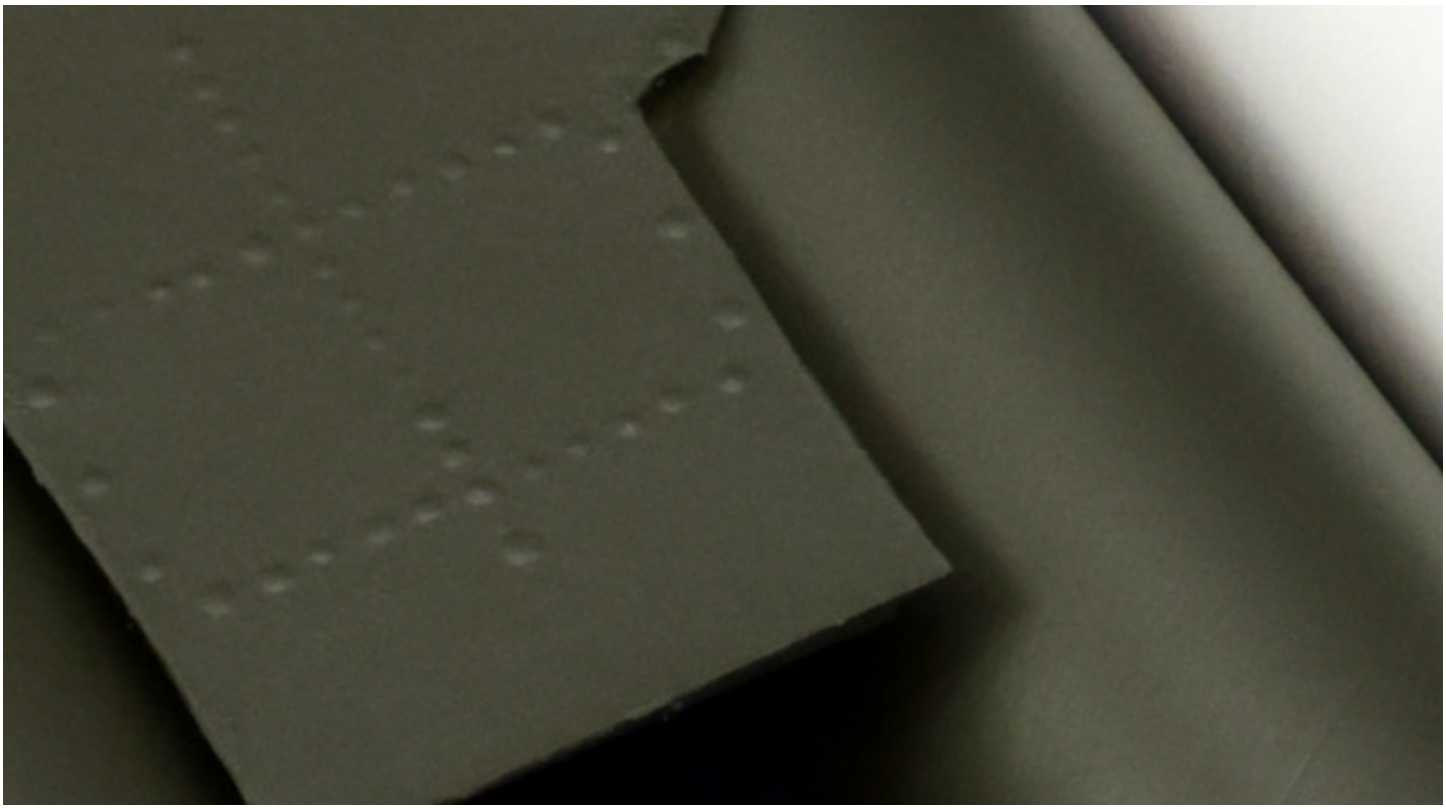
A major advantage of the epoxy is its ability to be colored with epoxy pigments. This is especially useful for light-colored paint schemes where the result is a pre-shaded set of rivets.

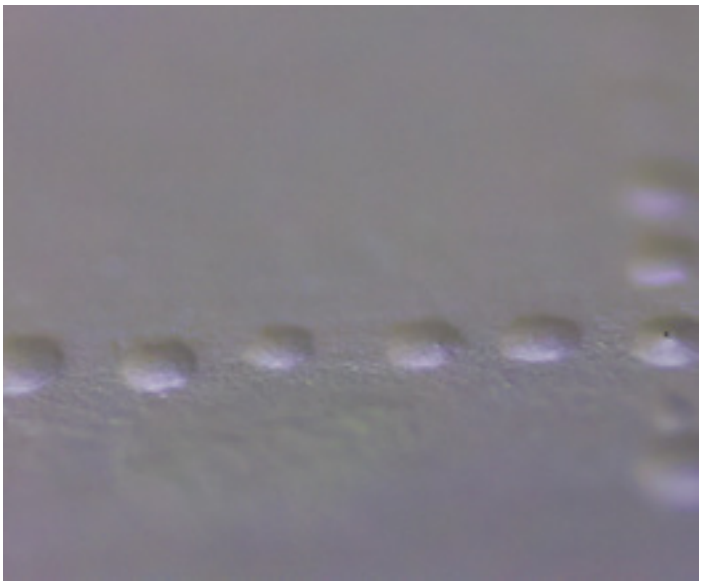
PEAK OF FLIGHT NEWSLETTER

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Epoxy Glue Rivets Shown on a Nike Hercules Model Rocket



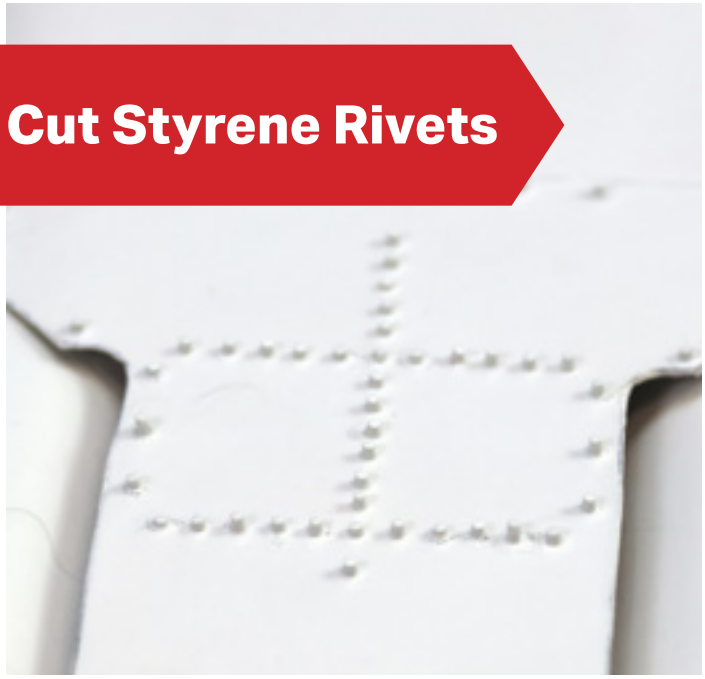
PEAK OF FLIGHT NEWSLETTER

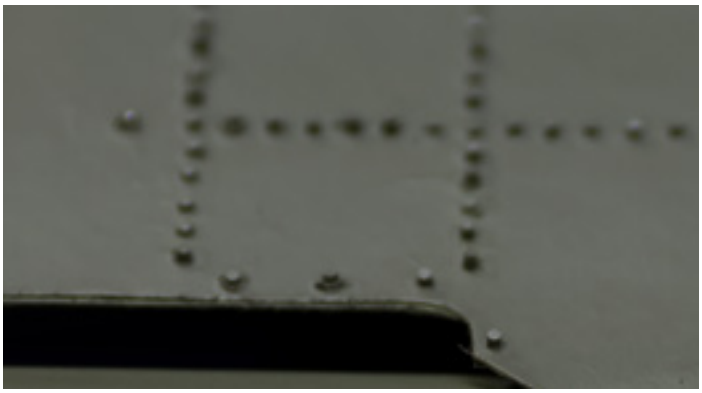
Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets

Cut Styrene Rivets





PRO

- Similar diameter on all rivets
- Very pronounced, and rivet can be various shapes
- Potential for cool 3D textures

CON

- Difficult to cut uniformly which can lead to a messy profile
- Tend to stick to tweezers
- Must be placed in the correct orientation
- Not as robust as other options
- Very time consuming

Materials

- Styrene rod of appropriate size and shape
- Medium CyA adhesive to attach
- Sharp hobby knife to trim to length
- Needle for adhesive application
- Tweezers for placing plastic segments

Method

To prepare the styrene rod as rivets, it must be cut to length. This is likely the most difficult step in this method as cutting a very small rod into short lengths is difficult to do consistently and the small parts have a tendency to fly away as soon as they are cut. The trick that we found most effective for preventing the parts from getting lost was to cut on a section of cellophane tape with the adhesive facing up. If we were attempting to use this method for a full rocket that we intended to present at the field, we would also likely design a cutting jig just to make it easier to cut the segments more consistently.

Application of the rivets is simple, though not particularly easy. Place a small dot of medium CyA in the desired position, then pick up a single rivet and place (correctly aligned!) in the adhesive. The rivets can be repositioned for a short time.

Notes:

Because there are many shapes of styrene available in many sizes, there are almost an unlimited variety of rivets to be created.

Moreover the shape of the rivets varies along the axis of the rod and orthogonal to it, there is a correct orientation to place the rivets. This makes placement significantly more difficult.

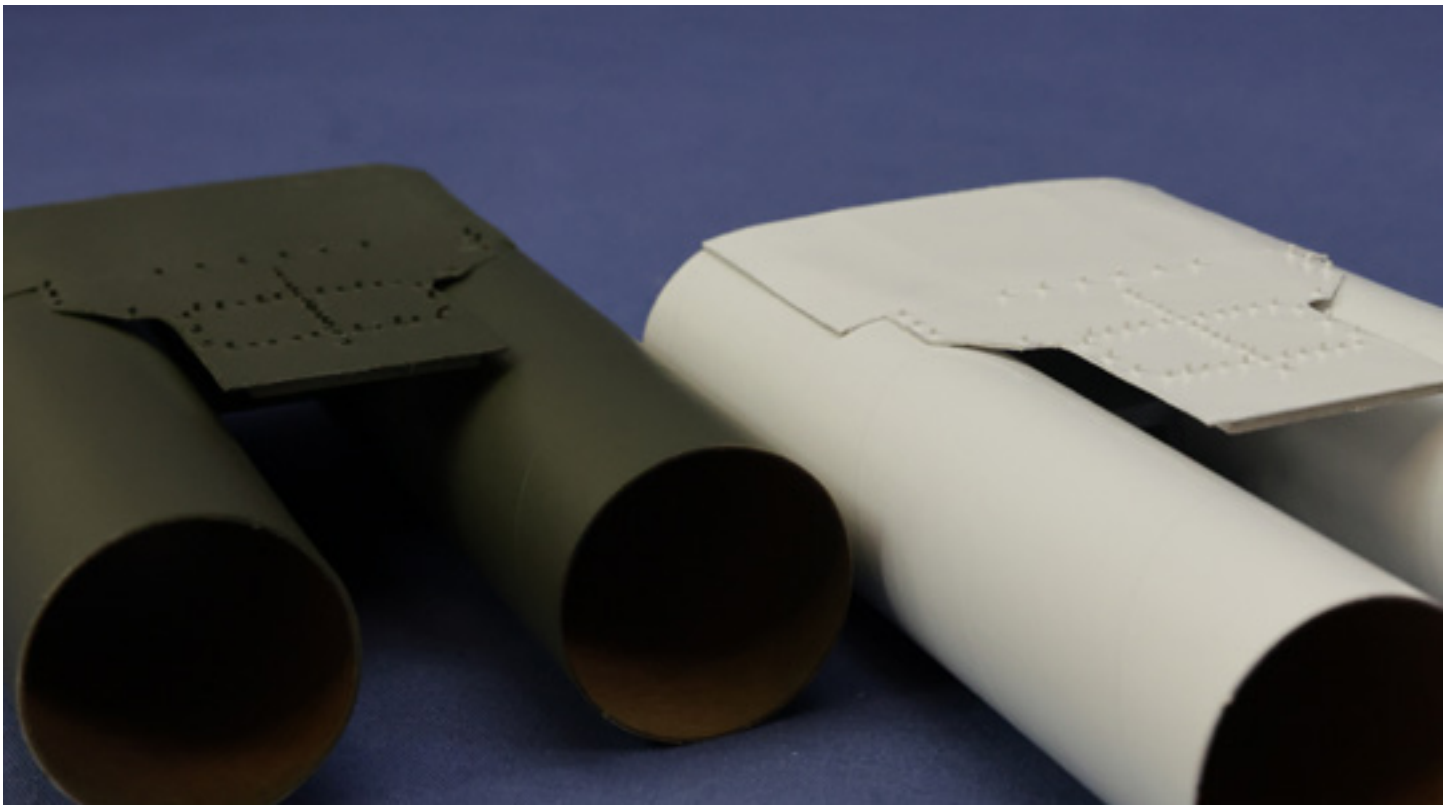
This would likely be my last choice for rivets on a scale rocket just due to the difficulty, but I will hold on to it as an option when I need something special such as triangular or hexagonal rivets.

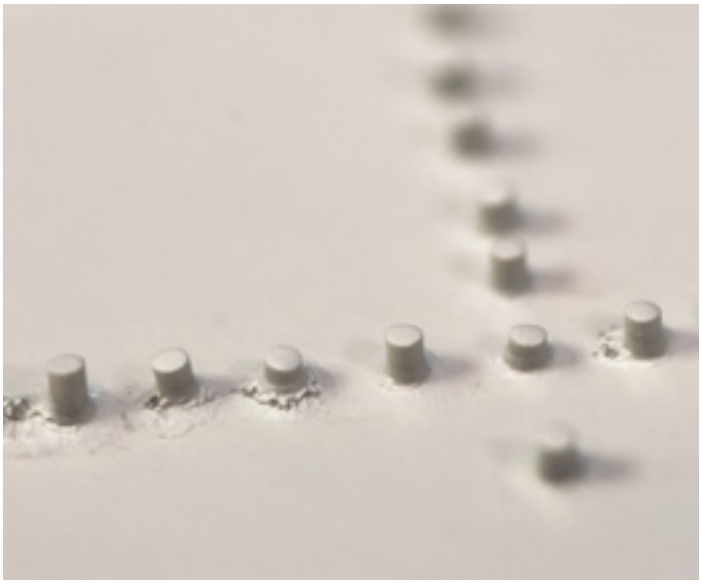
PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Cut Styrene Rivets Shown on a Nike Hercules Model Rocket



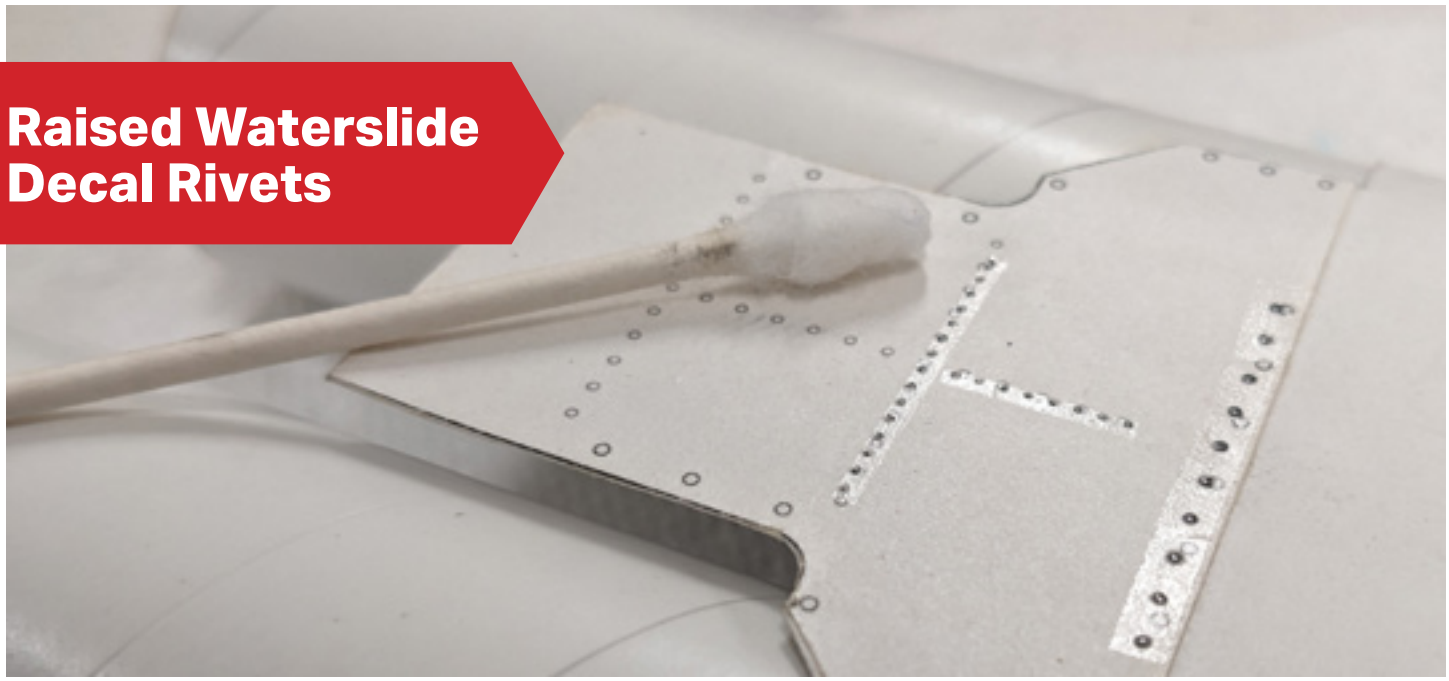
PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Raised Waterslide Decal Rivets



PRO

- Consistent size and spacing
- Small sizes possible

CON

- Moderately expensive
- Decal film edges can be visible
- Application is not easy

Materials

- Raised waterslide decals
- Hobby Knife/Scissors
- Optional Decal Solvent

Method

As with all waterslide decals, these decals need a very smooth surface for application. As such, any porous materials should be fully sealed to a glossy finish before application. Application is identical to other waterslide decals where the decals are cut apart, softened in water, and slid off the backing paper onto the surface. Once applied, the suggestion is to use decal solvent applied to the edges to prevent the sharp edges of the decal film showing in the final result. I did not use decal solvent and the decal edges certainly detract from the final result.

Notes:

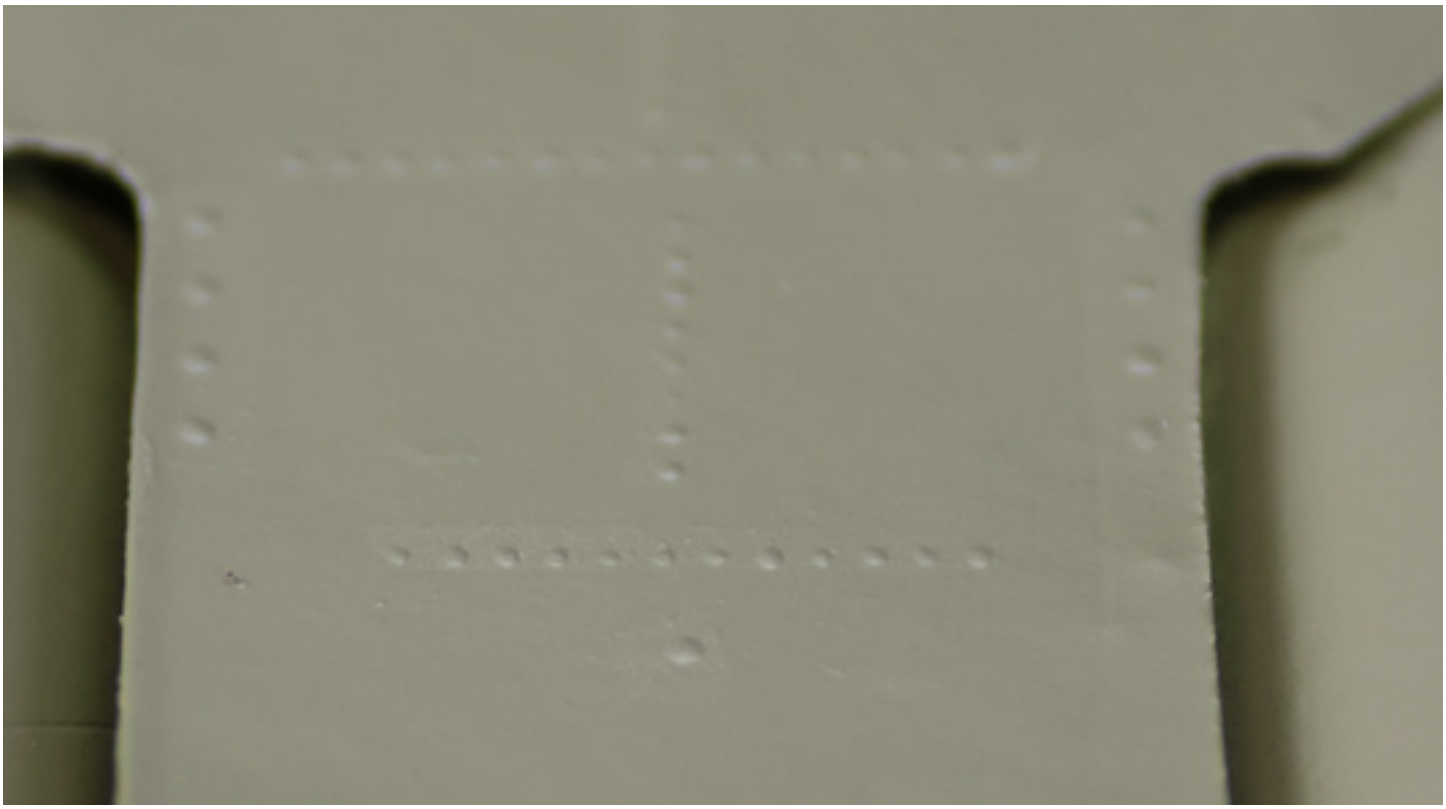
I was actually somewhat disappointed in this method. The biggest problem is just that any ease of application comes from using the largest sections of the decal sheet possible. But, due to a very limited selection of sizes, the rivet strips do not match the spacing of the decals on the Nike-Hercules. For adding surface detail to random rockets, this is probably a very good method, especially if the decal solvent is used as the results are very consistent and application is reasonably fast. It is not easy, however, just because the decals end up being extremely long and thin.

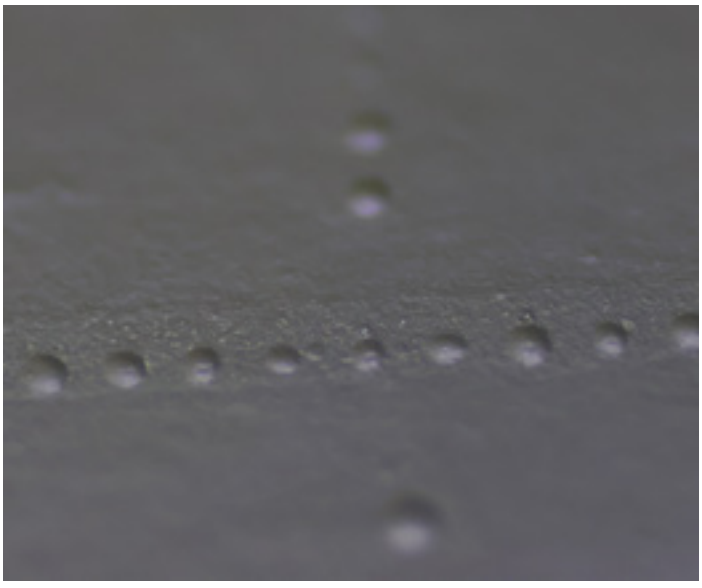
PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Raised Waterslide Decal Rivets on a Nike Hercules Rocket



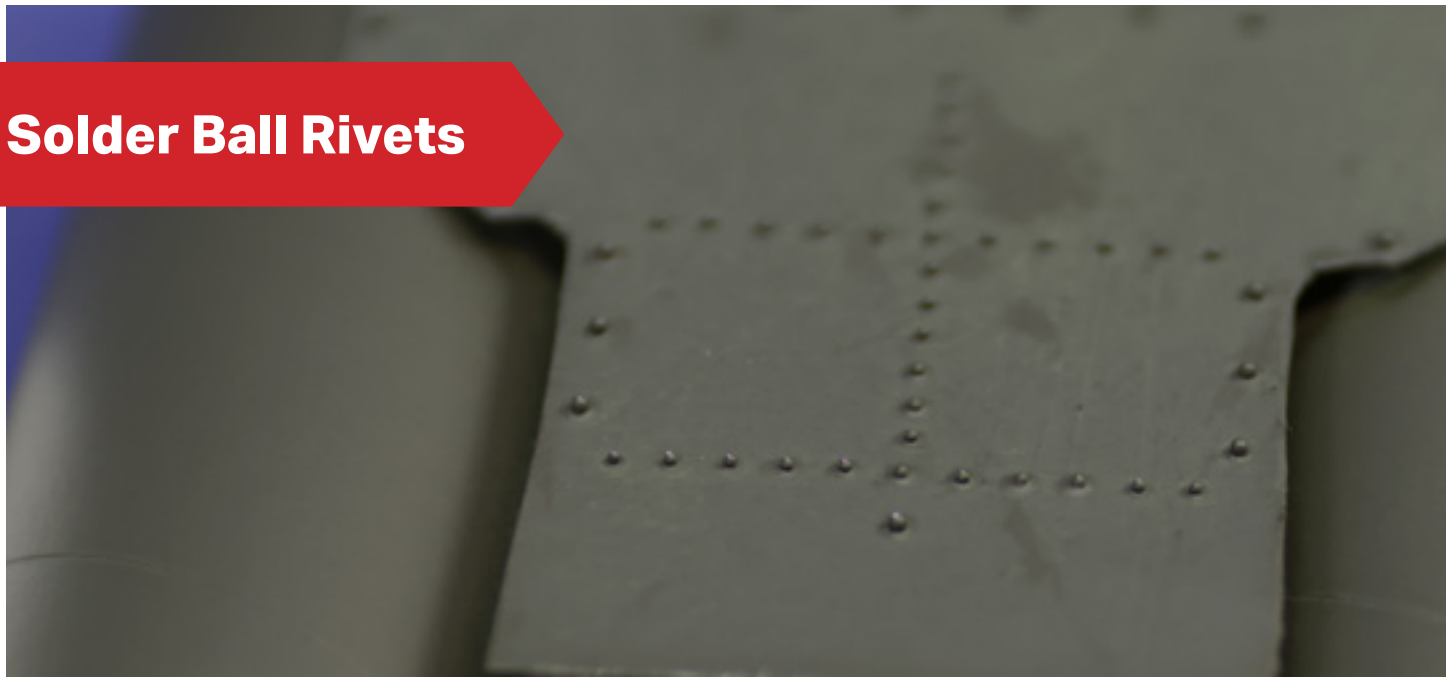
PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Solder Ball Rivets



PRO

- Extremely consistent size
- Many sizes available
- Inexpensive

CON

- Time consuming
- More prone to damage

Materials

- Solder balls (can buy online from a variety of retailers)
- Medium CyA adhesive (superglue)
- Needle to apply glue
- Tweezers to place solder balls

Method

To apply solder ball rivets, simply place a small dot of CyA adhesive in the desired location and place a single ball centered in the glue. The process is extremely simple. The difficulty comes from applying a minimal amount of glue (to avoid glue spread beyond the base of the rivets.

Notes:

The availability of different solder ball sizes allows rivets of different sizes while still retaining the consistency of the manufactured balls. The solder balls are quite easy to knock out of place before the surface is painted, but much more secure with a coat of paint. Nevertheless, the solder balls are one of the easier types of rivets to damage or dislodge.

It is, however, difficult to beat the look of the solder ball rivets when they are complete. The rounded top combined with the very consistent size and well defined shape make for a particularly effective rivet.

I'd be tempted to try mounting the rivets with epoxy to increase the robustness of the finished product as well as to better fill in the bottom half of the ball for an even better reproduction of a rivet.

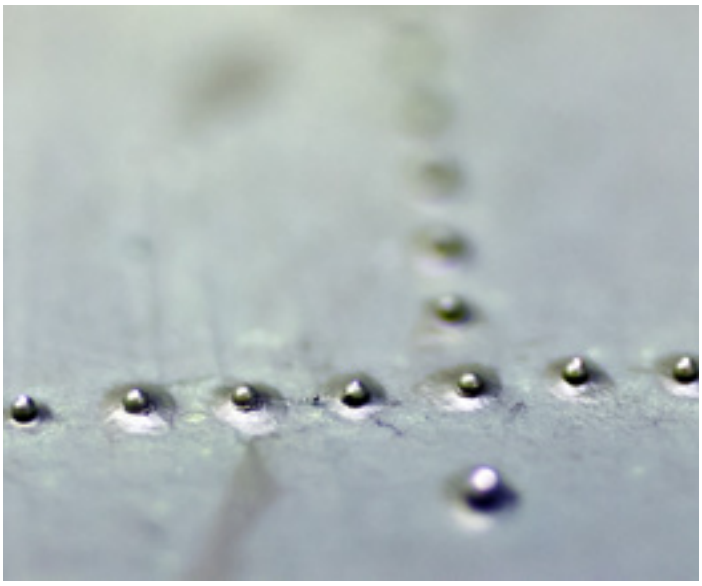
PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Solder Ball Rivets shown on a Nike Hercules Model Rocket



PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

3D Printed Rivet Sheets



PRO

- Clean and very uniform rivets
- Hands off while printing, only requires setup & minor finishing
- Inexpensive

CON

- Requires a very tuned printer and 0.2mm nozzle
- Requires a 3D printer and experience using it
- Requires design work to prepare the rivet sheets

Materials

- 3D printed rivet sheets
- Medium CyA adhesive

Method

The rivet sheets must be designed in 3D design software. If one is already skilled in such software and they already have a digital drawing at the appropriate scale, this is not a complicated process. In the absence of those things, however, it can be a challenge. Once the sheets are designed, they must be printed and that requires a fairly special 3D printer for standard size model rockets. We used a modern FDM printer with an absolutely tiny 0.2 mm nozzle and printed the sheet with two 0.12 mm layers. The result was a sheet roughly the same thickness as the cardstock it replaced on the shrouds, & still sturdy enough to work with easily.

Once rivet sheets are printed, they need only be glued into place using medium CyA adhesive. Apply a small amount to the entire surface of the sheet, and press into place once aligned. Because of the thin layer, the adhesive will set almost immediately.

Notes:

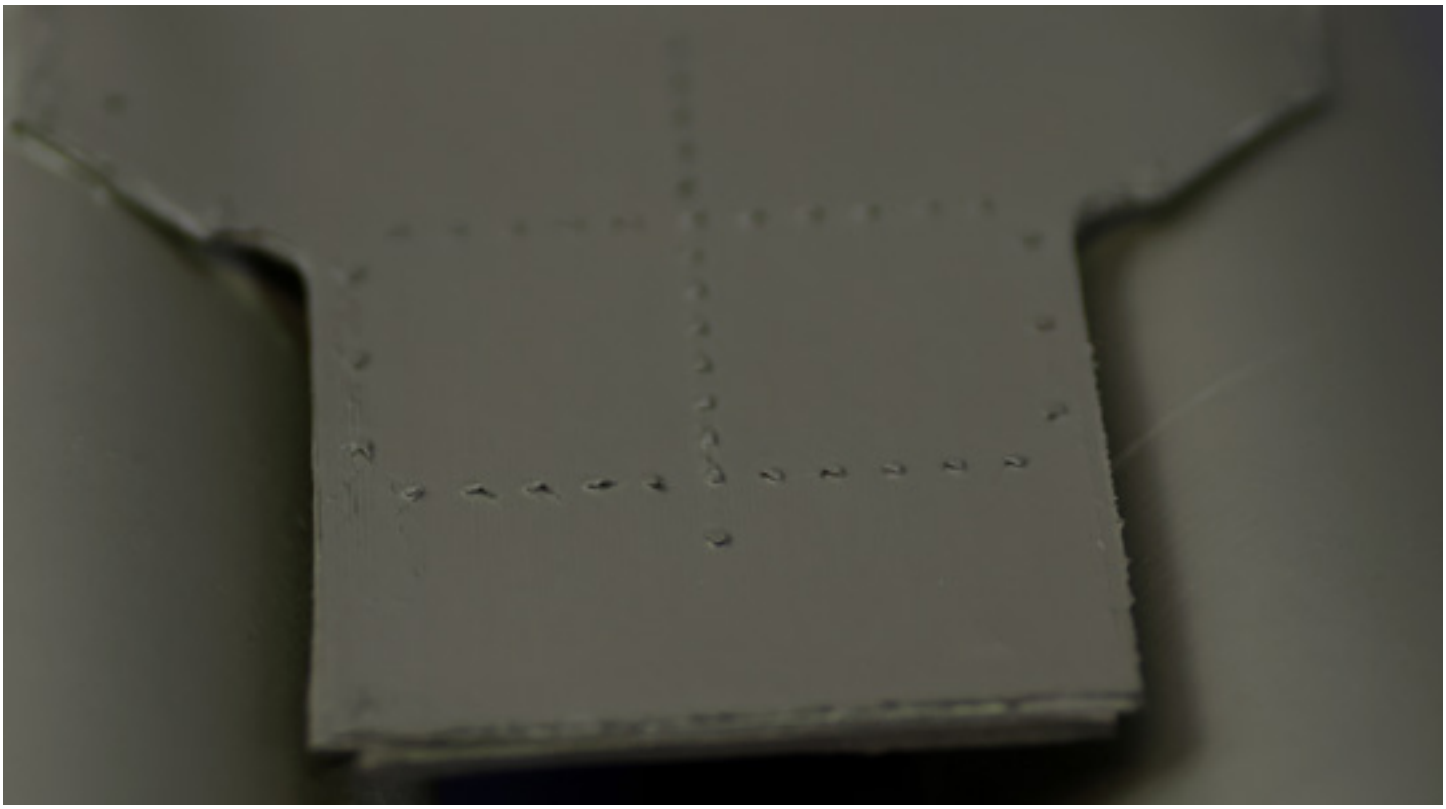
The design and printing of 3D printed rivet sheets are both challenging as the parts are just so small. It is an interesting process, however, as rivets, bolts, and screws can all be represented. In addition, the thin backing sheet can be made integral to the aesthetics, such as a hatch or raised panel (e.g. Nike-Hercules shroud).

PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





3d Printed Rivets shown on a Nike Hercules Model Rocket



PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Micro-Hardware Bolts and Screws





PRO

- Stunning detail that is likely unmatchable otherwise
- Easy and quick to apply

CON

- Can be extremely expensive
- Can add significant weight
- Punctures the wall of the rocket and could foul recovery system or interact motor mount

Materials

- Hardware to install
- Small drill bit (to match hardware)
- Screwdriver, socket, or pliers if hardware must be twisted
- Thin CyA adhesive to lock hardware in place

Method

Drill a hole in the surface that the hardware is to be applied to and twist the hardware into place using the appropriate screwdriver or socket, or a pair of pliers if none is available. When the hardware is installed correctly, apply a small amount of thin CyA adhesive to lock the hardware into place.

Notes:

Using micro hardware for bolt and screw heads is an extrememly easy way to get exceptional detail. However, in small quantities, micro hardware can easily approach $1 per screw, so it rapidly becomes cost prohibitive. For the test here we used 00-90x1/4" brass screws that are still just a bit larger than they should be for the booster fin attachment bolts on the Nike booster.

A variation of this method that I have not had a chance to test that seems interesting and far less expensive is to 3D print fake hardware on a resin printer. This could be done either with a stem (to make accurate mounting easier) or without one (to make the detail 100% surface mounted). A modern resin printer should be fully capable of the required detail though the printing process as a whole may be a bit of a challenge. Overall, it is a process worthy of consideration.

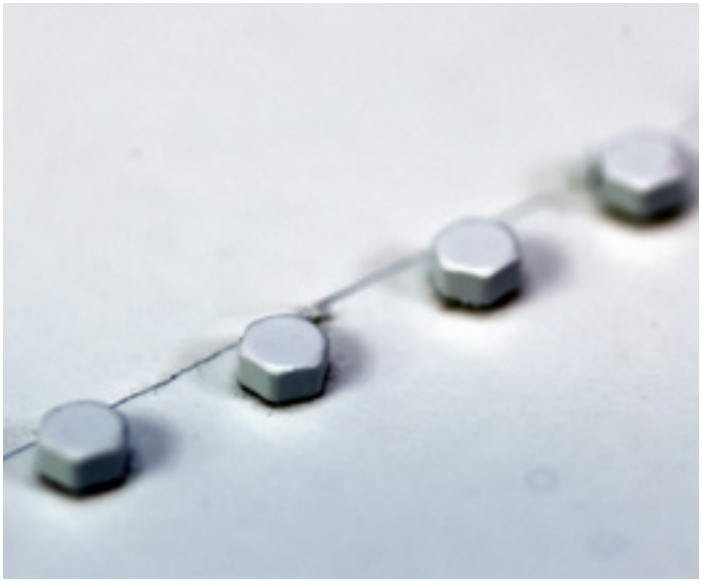
PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Micro-Hardware Rivets on a Nike Hercules Model Rocket Kit



PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Hand-Painted Flush Rivets



PRO

- Inexpensive and Easy
- Fast Application

CON

- Difficult to make consistent
- Actually slightly raised from the surface

Materials

- Enamel paint
- Detail paint brush

Method

Apply dots of the enamel paint to the surface at locations of flush mount rivets after having prepared the surface for final paint. Allow the rivets to dry entirely then spray the final coat of paint on the surface.

Notes:

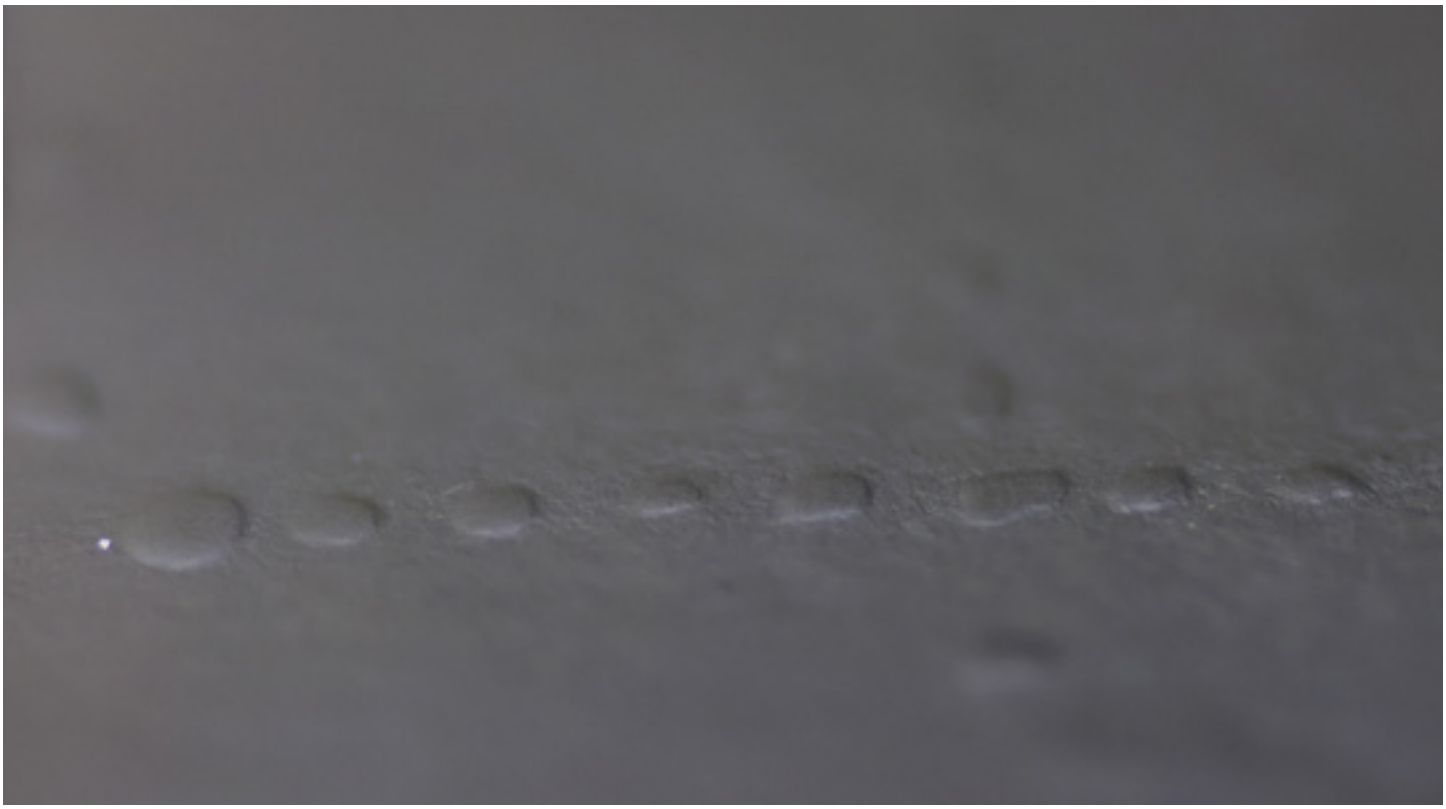
Rivets are made visible both as a result of the slightly raised nature of the paint dots as well as through preshading.

PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets



Painted Flush Rivets on a Nike Hercules Model Rocket Kit



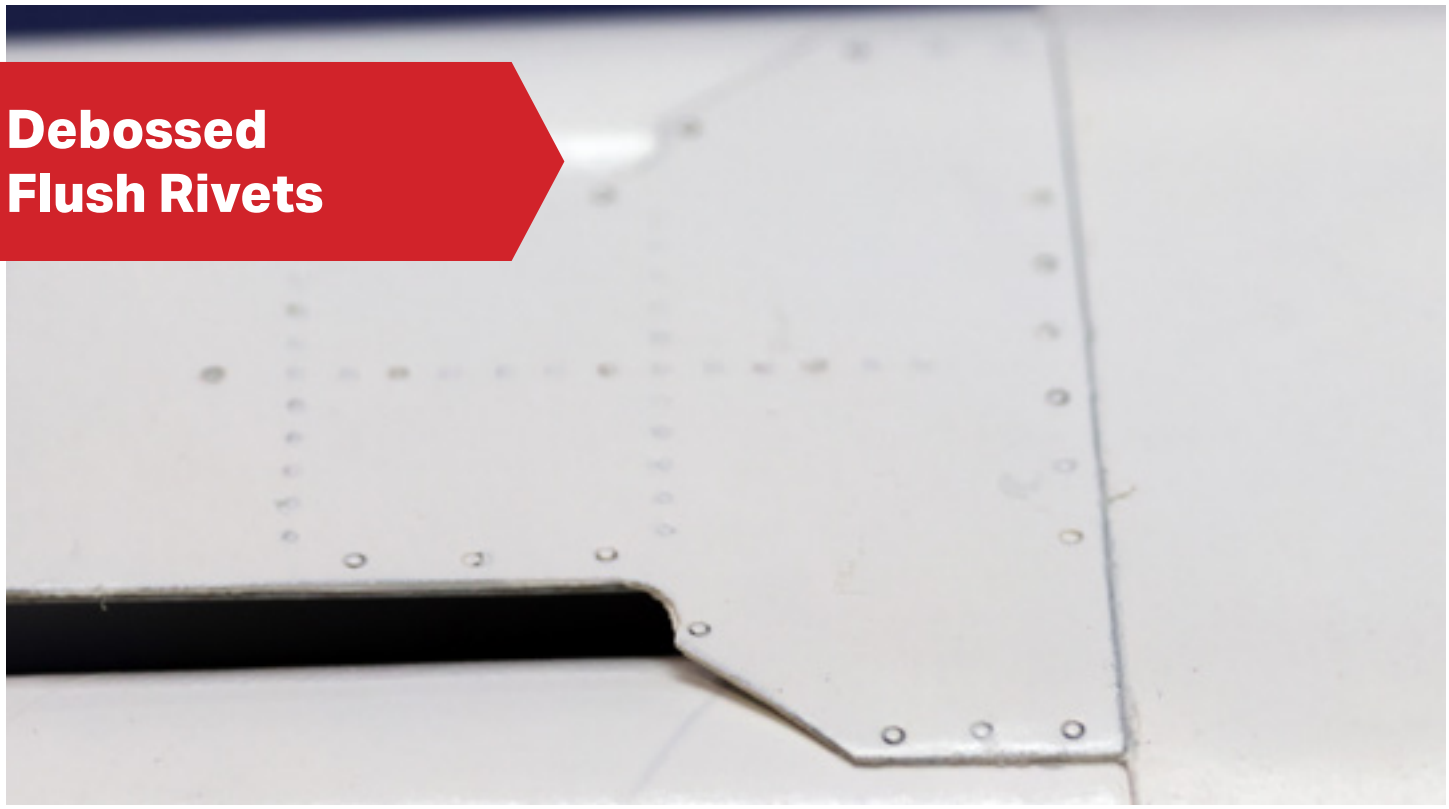
PEAK OF FLIGHT NEWSLETTER

Applying Rivet Surface Details to Model Rockets

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Debossed Flush Rivets



PRO

- Truly flush with the surface
- Size is extremely consistent
- Not particularly difficult

CON

- Time consuming
- Can weaken surfaces
- Best done on a flat sheet before mounting

Materials

- Small-diameter stainless steel (surgical SS) tubes
- Some method to hold the tubes

Method

Debossed rivets are formed by pressing the tube into the surface of the model (in the case of the tests here, the cardstock skins. This forms an indention which is then visible in the final product. Greater pressure will result in a deeper impression, of course, but excessive pressure can easily punch through a surface. Also, this method works best when it is possible to lay whatever is to be riveted flat on the work surface.

Notes:

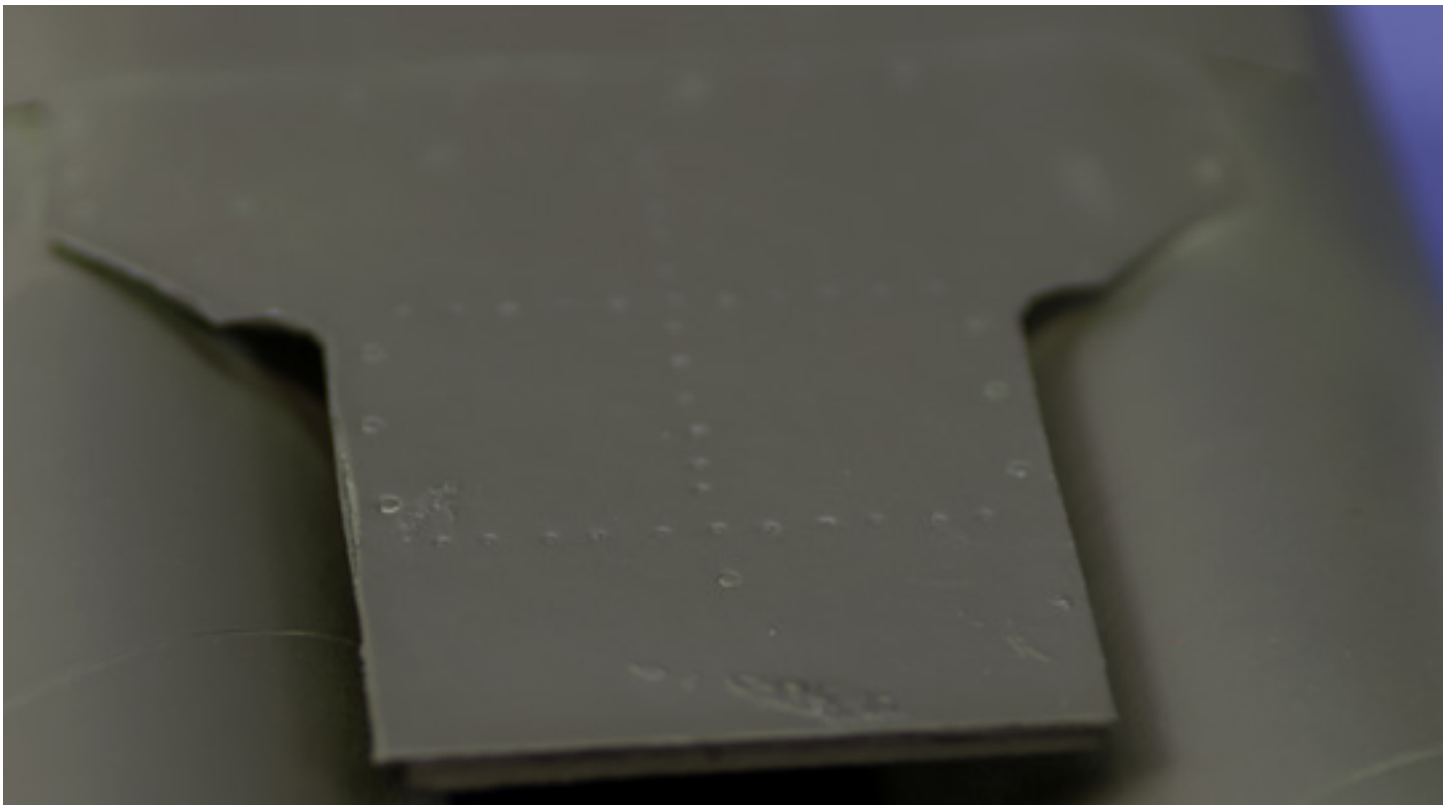
The debossed rivets works substantially better than expected. Visually they are exceptionally accurate to real-life flush-mounted rivets. They are also extremely consistent due, in large part, to the use of precision-manufactured tubing as a punch. This method is my favorite by far for flush-mounted rivets short of simply painting the surfaces smooth.

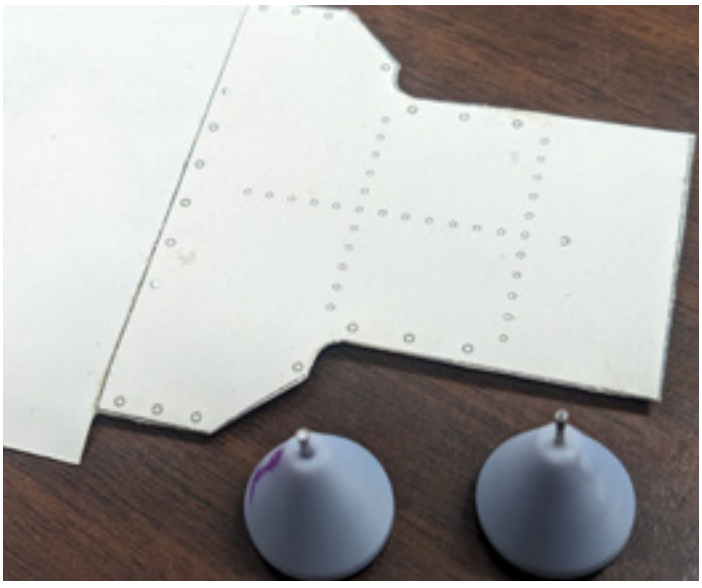
PEAK OF FLIGHT NEWSLETTER

Issue 643 /January 14th, 2025

www.ApogeeRockets.com

Applying Rivet Surface Details to Model Rockets





Debossed Flush Rivets on a Nike Hercules Model Rocket Kit



Conclusion

The variation in results between the many methods examined here proved to be quite enlightening. For instance, while the various glue dot rivets resulted in some of the worst results in our tests, their ease of creation and extremely low cost make them a highly valuable method to keep in your back pocket. On the other hand, the 3D printed rivet sheets were an idea that came about late in the article development process as a direct response to the difficulty in creating consistent rivets.





(From top to bottom) 00-90 Hex Screw Rivets on the Nike Hercules Kit, Solder Ball Rivets on the Nike Hercules Kit

My personal takeaway is not that any of these methods is bad, but that there are some methods better suited to different scenarios than others. For instance, CyA adhesive rivets seem like an excellent solution for a steam-punk sport rocket. Their quick application and low cost are ideal for sport rockets, and the inconsistency is actually highly appropriate for a steam-punk aesthetic. Conversely, the 3D printed decal sheets are ideal for the Nike-Hercules shroud rivets where the rivets are applied to an almost perfectly flat surface. Similarly, there is simply no way to improve on the look of using real microsize hardware when an appropriate size can be found, but it only makes sense when the associated cost is justified for the project.

Once applied, raised rivets can be improved by dry brushing a contrasting color onto the surface of the rivets and applying a weathering wash around the base. Combined, these two processes add significant visual depth and interest to the finished product. This brings up an important point. For all the methods outlined here, the best rivets are nothing without a good coat of paint. Adding rivets is only one step in correctly finishing the rocket.

Before finishing, I'd like to thank one of our customer service representatives, Tristan, for his assistance in making this article happen. Tristan helped with applying several of the rivets to the test articles and it was he who had the idea to do the 3D printed rivets. In fact, not only did he have the idea to 3D print rivets on a thin substrate but he designed and printed the parts himself. That method simply would not exist in this list without his insight.

Not every rocket needs rivets. To be fair, the rockets that really need such intense detail are very much in the minority. But, having the ability to apply appropriate rivets is a skill that opens up several possibilities for both scale and fantasy rockets. Beyond that, any new skill that one learns as a modeler opens a landscape of new directions to take your hobby. Having gone through the process of testing all these methods, I'm itching to do a full-up test on a rocket. Maybe it won't be a Nike-Hercules - to begin with - but I'm sure that there is a riveted rocket somewhere in my future.





About the Author:

Martin has been designing and building rockets for as long as he can remember. After originally toying with the idea of pursuing a career in Aerospace Engineering, he decided to double major in Computer Science and Fine Arts, spending a decade working in K-12 math & science education. He joined Apogee Components as the Product Designer in 2022.





PEAK OF FLIGHT NEWSLETTER

Issue 643 / January 14th, 2025

www.ApogeeRockets.com

Article Submission Guidelines

SUBMITTING ARTICLES TO APOGEE

We are always looking for quality articles to publish in the *Peak-of-Flight* newsletter. Please submit the "idea" first before you write your article. It will need to be approved first.

When you have an idea for an article you'd like to submit, please use our contact form at **https://www.apogeerockets.com/Contact**. After review, we will be able to tell you if your article idea will be appropriate for our publication.

Always include your name, address, and contact information with all submissions. Including best contact information allows us to conduct correspondence faster. If you have questions about the current disposition of a submission, contact the editor via email or phone.

CONTENT WE ARE LOOKING FOR

We prefer articles that have at least one photo or diagram for every 500 words of text. Total article length should be between 2000-4000 words and no shorter than 1750 words. Articles of a "how-to" nature are preferred (though other types of articles will be considered) and can be on any rocketry topic: design, construction, manufacture, decoration, contest organization, etc. Both model rocket and high-power rocket articles are accepted.

CONTENT WE ARE NOT LOOKING FOR

We don't publish articles like "launch reports." They are nice to read, but if you don't learn anything new from them, then they can get boring pretty quick... Example: "Bob flew a blue rocket on a H120 motor for his certification flight." As mentioned above, we're looking for articles that have an educational component to them, which is why we like "how-to" articles.

You can see what articles and topics we've published before at: **https://www.apogeerockets.com/Peak-of-Flight?pof_list=archives&m=education**. You might use this list to give you an idea or two for your topic.

Here are some of the common articles that we reject all the time, because we've published on these topics before:

- How to get a L1, L2, or L3 Cert
- Building cheap rockets and equipment (pads & controllers)
- How to 3D print parts, or a Rocket Kit
- How to Build a cheap Rocket Kit
- Getting Back Into Rocketry After a Long Hiatus

ARTICLE & IMAGES SUBMISSION

Articles may be submitted by emailing them to the editor. Article text can be provided in any standard word processor format, or as plain-text. Graphics should be sent in either a vector format (Adobe Illustrator, SVG, etc.) or a raster format (such as jpg or png) with a width of at least 600 pixels for single column images or 1200 pixels for two-column images. It is preferable for images to be simple enough to be readable in a two-column layout, but special layouts can be used.

Send the images separately via email as well as show where they go by placing them in the word processor document.

ACCEPTANCE

Submitted articles will be evaluated against a rubric (available here on our website). All articles will be evaluated and the results will be sent to the author. In the evaluation process, our goal is to ensure the quality of the content in *Peak-of-Flight*, but we want to publish your article! Resubmission of articles that do not meet the required standard are heavily encouraged.

ORIGINALITY

All articles submitted to Peak-of-Flight must not run in another publication before inclusion in the *POF* newsletter, but it may be based on another work such as a prior article, R&D report, etc. After we have published and paid for an article, you are free to submit them to other publications.

RATES

Apogee Components offers **$300** for a quality-written article over 2,000 words in length. Payment is pro-rated for shorter articles.

WHERE WILL IT APPEAR?

These articles will mainly be published in our free newsletter, *Peak-of-Flight*. Occasionally some of the higher-quality articles could potentially appear in one of Tim Van Milligan's books that he publishes from time to time.

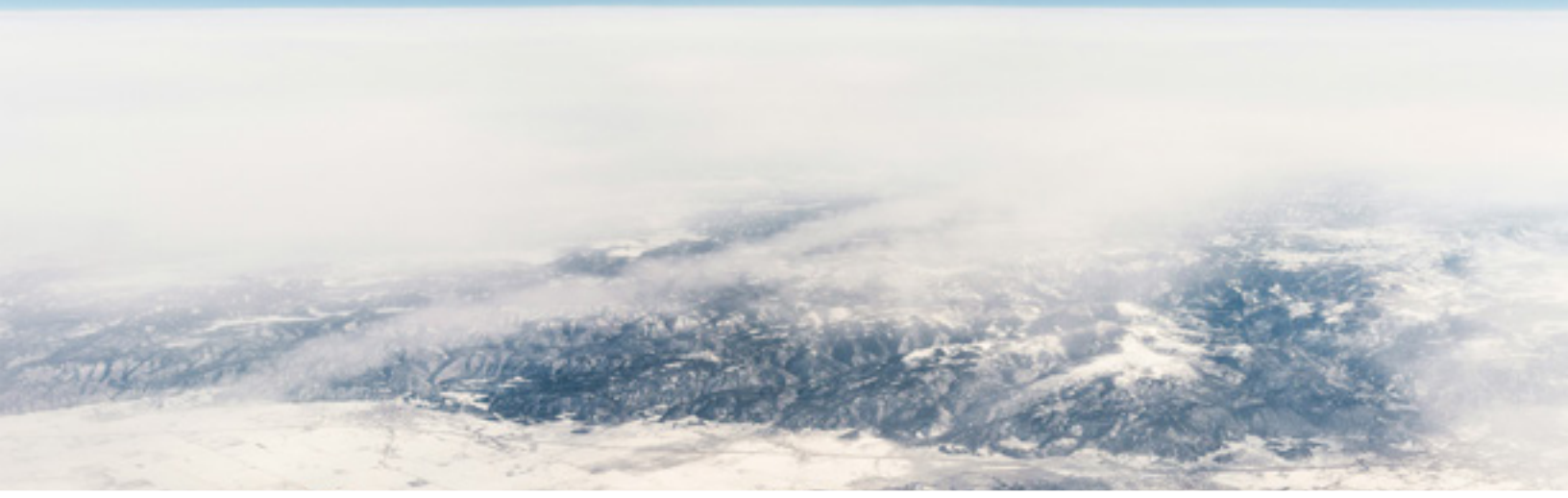



WAYFARER
WAYFARER
BUY NOW
GET STARTED WITH ROCKETRY
IN A BIG WAY!
Classified as a Skill Level 1, Easy-to-Build.



Apogee Components, Inc.
4960 Northpark Dr.
Colorado Springs, CO 80918
719-535-9335

Your Success Is Our Mission!



www.ApogeeRockets.com