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APOGEE PEAK OF FLIGHT NEWSLETTER

Feature Article

How To Join Paper Transition Sections

Coming Features In RockSim v8

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RockSim 8: Here Is A Quick Peek At A Few Of The New Changes

By Tim Van Milligan

RockSim version 8.0 is coming along, and we hope to release it "soon." Before I go on, I know the question on your lips: "WHEN?"

I wish I could give you an exact date. But every time I do that, we seem to miss the date. And then I get flooded with emails asking when the new date is. It is a cycle that keeps repeating, and it is aggravating both to you and others.

So while I can't give you a date yet, I can say we are getting near the end of the process. We can see the light at the end of the tunnel. Just stay glued to this e-zine newsletter for an official announcement that will be forthcoming.

What I want to do in this issue is tell you about a few of the significant changes we're making in RockSim version 8. Why? Because I think it will give you something to look forward to once the new software is released.

One of the main goals of the new release is to make the program even easier to work with. You'd be surprised at how many people have specifically told us they went out and bought a computer, just so they could use RockSim. Because of this, we knew that many people aren't familiar with moving files around on their computers, or how to search for things. Therefore, we wanted to make an extra effort to ensure that these "newbies" to computers would be extra delighted using RockSim.

This is just one of the reasons we used to justify the creation of a Macintosh version of RockSim. People that use macs tell us that they are easier to learn for newbies. Hopefully, you'll direct those (who aren't going to use a computer for anything other than running rocket simulations), to the Macintosh version. It will be easier and faster for them to get up and running, because they'll be able to unzip *downloads* and find files easier on their computers.

At this time, I also want to point out that both the Windows edition, and the Macintosh edition will have identical features. They'll both be equally GREAT. The only difference is minor things like how colors are chosen. The color pickers look a little different on Windows computers than they do on Macs.

I should also mention that RockSim files created on either type of computer can be opened on the other. For example, a rocket design file created on a Windows computer can be opened by users with Macs; and visa versa. You'll love sharing files, knowing that anyone can open them, even if they don't use the same type of computer as you use.

Changes to the Motor Database

One of the most difficult tasks people had using previous versions of RockSim was adding new motors to the engine database. It was a multi-step process that needed urgent simplification. First of all, you had to unzip the downloads into the "DATA" folder, which was buried deep within the bowels of the hard drive. It the files weren't in the correct folder, then RockSim wasn't able to find them. The next step was to compile them so they were in a format that RockSim understood and needed. The final step was to go into RockSim and restart or "reload" the database so that it could make the new motor files available for simulations.

All that hassle is gone in the upcoming version 8.0. You can download and put the new engine files into any folder you want. The compiler step is completely gone (YEAH!). The only thing you have to do is tell RockSim where the new engine files are stored. It will then automatically merge them into its database of motors, so you can select them when you want to run a simulation.

This whole process is much simpler, and should make many new users (and a few current users) very happy.

Another area that need simplification was how parts and materials are entered into the various databases. Adding materials wasn't so bad, but if you had more than one, it could seem like drudgery. Similarly, adding a lot of different com-

Continued on Page 3

About this Newsletter

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RockSim Changes

Continued From Page 2

ponents into the parts databases was also time consuming. You had to switch to a spreadsheet program, and carefully get the data into the correct columns. This added extra complication, because you had to know how to use a spreadsheet program on top of being able to move around within RockSim.

The new method of entering a large number of different components into the databases is greatly simplified. An easy-to-use table is set up in RockSim, which greatly speeds up adding new parts (see the image below).

All you'll have to do is open the correct parts database, and enter the dimensions that you've measured from your parts. You don't need to even own a spreadsheet program.

Only Simplifications: NO Down-Grades

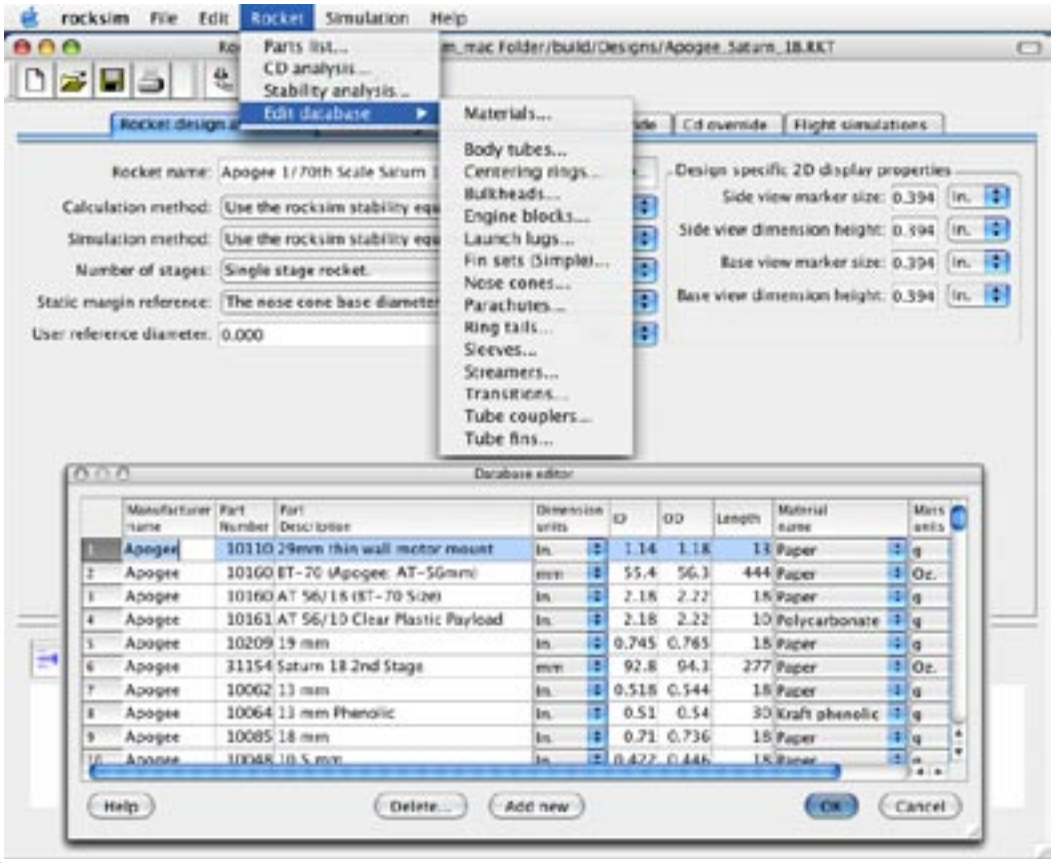
There are many other things that have been simplified in RockSim v8 compared to previous versions. But let me assure you that while it is simpler to use, the advanced features you've come to rely upon are still there, and are even better than ever. Making the software simpler to use will mean that expert users will be even faster at inputing and simulating their new designs. That is a win-win situation for both newbies and you experts.

Do You Have A Question?

Before I conclude this article, I'm sure that you will probably have a lot of questions about the new version. You may want to know things like: pricing, upgrading, switching over to Mac from your Windows computer, and about how you can become a beta tester for the new edition? I will answer all these questions in a future article in this e-zine newsletter. So please be patient. I know these types of things are important to you, and I won't forget about you and your requests.

Summary: RockSim v8 · Easier and Faster To Use

I want to sum up by saying that I am positive that you'll find the upcoming version 8.0 even easier and faster to use. That was one of our major objectives in creating this edition. We wanted to make sure that even younger modelers can easily check their designs before they fly them. No one should have the excuse that a computer is just too hard to use. RockSim v8 will seem easy and fun to everyone!



While this article focused on just a couple of the features we are changing in v8 to make RockSim easier to use, there are many many others. I'll get to talking about them in a future article.

But if you are an expert RockSim user, you may be saying: "So what. Why should I only care about making RockSim easier? What are the new features that will allow me to design even more unique rockets?" All I can tell you at this point is to get ready to hold on to your socks. There are a few new features that will knock them off! Stay tuned. It will be worth it to you to upgrade to get these new enhancements.

Connecting Together Paper Transtion Sections

By Tim Van Milligan

In this article, I'd like to show you how to perform one of the most difficult assembly tasks in rocketry. It is joining two paper transitions together. I would classify this as a Skill Level 1 type task. But once you know how to do it correctly, you'll be designing a lot of really cool rockets.

First, let me give you an example of a scale rocket where this is used. As you see in Figure 1, the Nike-Hercules missile has two transitions that are joined together to make up the forward section of the booster stage.

When you are designing a rocket that will have two paper transitions joined together, you have to make some allowances to make some portions of the front transition slightly oversized. This is probably the trickiest part of the whole process. Because if it isn't the right size, you'll have to start over from scratch, which can be frustrating.

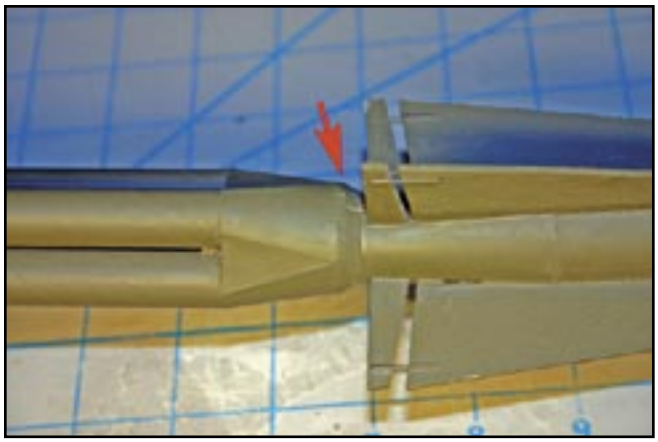


Figure 1: The Nike-Hercules missile has two transitions that are joined together.

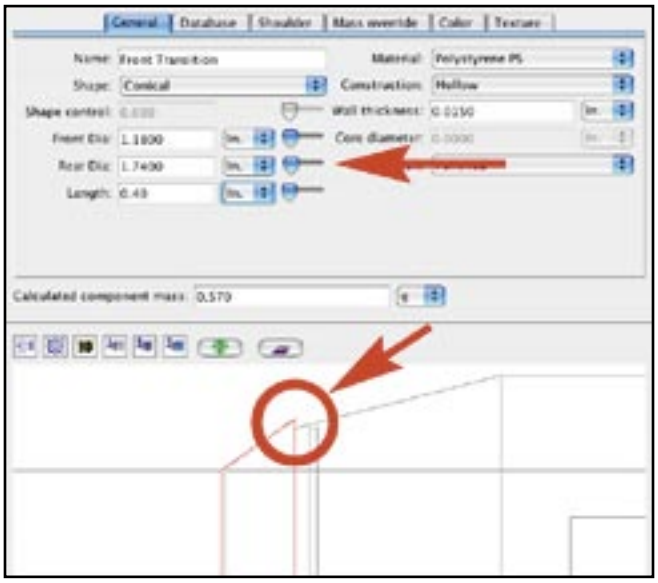


Figure 2: When sizing the front transition, make the "rear" diameter 0.10 inches larger than actual, so that it overhangs the aft transition.

In version 7.0.4 of RockSim, we added a feature to allow you to print out paper transition pattern sheets. So I'll be using it for this example. Actually, I'll be using version 8.0 of RockSim because it works on my Macintosh, but the technique is the same if you have the older version 7.0.4.

Continued on Page 5

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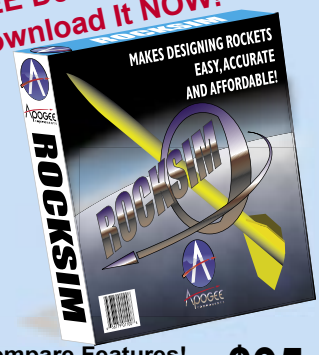

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I'm Sorry...

Because this article is so large, and contains so many photographs, the file size of this issue of the *Peak-Of-Flight e-zine Newsletter* has exceeded its allowable capacity. I had to delete pages 5 through 9.

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Connecting Transitions

Continued From Page 9

How To Make Centering Rings: *Apogee Peak-of-Flight E-zine Newsletter #126.* http://www.ApogeeRockets.com/education/downloads/newsletter126.pdf

Body Tubes & Centering Rings. Get them at: http://www.ApogeeRockets.com/body_tubes_and_rings.asp

RockSim Software to print out transition pattern sheets: http://www.ApogeeRockets.com/rocksim.asp

Building Skill Level 1 Model Rocket Kits: learn the techniques of making and painting great looking rockets. Get it at: http://www.ApogeeRockets.com/skill_level_1_video.asp

About The Author

Tim Van Milligan (a.k.a. "Mr. Rocket") is a real rocket scientist who looks forward to helping out other rocketeers. Before he started writing articles and books about rocketry, he worked on the Delta II rocket, that launched satellites into orbit around the earth. He has a B.S. in Aeronautical Engineering from Embry-Riddle Aeronautical University in Daytona Beach, Florida, and has worked toward a M.S. in Space Technology from the Florida Institute of Technology in Melbourne, Florida.

Currently, he is the owner of Apogee Components (http://www.apogeerockets.com) and the curator of the rocketry education web site: http://www.apogeerockets.com/education. He is also the author of the books: *"Model Rocket Design and Construction," "69 Simple Science Fair Projects with Model Rockets: Aeronautics"* and publisher of the FREE e-zine newsletter about model rockets. You can subscribe to the e-zine at the Apogee Components web site, or sending an email to: ezine@apogeerockets.com with "SUBSCRIBE" as the subject line of the message.

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Launch Angle - Max Altitude. Finds the launch rod angle to produce a user-specified maximum altitude. Useful for optimization studies with wind in the simulation.

Launch Angle - Range. Finds the launch rod angle to produce zero range at landing for "On the pad recovery." Useful with wind in the simulation or for ballistic trajectories with non-zero range.

Parachute Cd - Range. Finds the parachute drag coefficient to produce zero range at landing for "On the pad recovery." Usually only useful with wind and non-zero launch angles in the simulation.

For more information, visit: www.ApogeeRockets.com/smartsim.asp

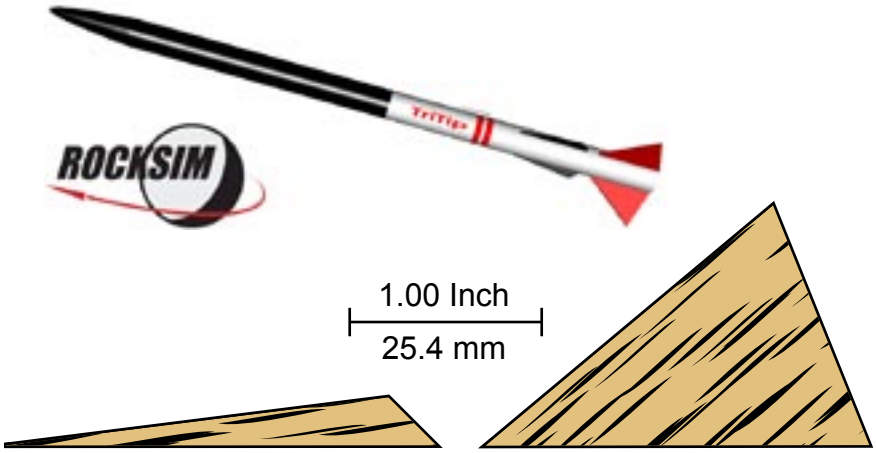
FREE PLAN: "Tri-Tip"

By: Shrox

Download the FREE RockSim Plans And Decal Artwork!

The data file you need is at:
http://www.ApogeeRockets.com/shrox/tri-tip.html

When you download the file, you'll get a RockSim design (requires v7 or newer), and the color decal artwork that you can print out to put on your completed rocket.



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