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APOGEE

PEAK OF FLIGHT

NEWSLETTER

How to Destroy a Perfectly Good Rocket Kit?

By Tim Van Milligan

With the upcoming production of the highly detailed Apogee Saturn V and the Apogee Saturn 1B kits, I'd thought I'd make some predictions on how modelers will destroy them before they're ever flown.

To be honest, there is really only one way to screw up any kit. But it is manifested in many forms. That one way is a lack of patience. Or put another way: being in hurry to complete the building of the model.

Let me give you a good example. Have you ever put a fingerprint onto the paint of your rocket to see if it was hard? Hmmm? Been there, done that myself too. We've all been told countless times that it takes at least 24 hours for Krylon brand of paint to harden. Yet we just have to test it for ourselves after 20 minutes.

There are other ways to ruin a rocket too; and they all come back to being in a hurry.

1. Not having the proper tools to build the model. If you don't take the time to gather up the right tools (knives, rulers, sanding T, small files, etc), you end up using other less appropriate devices. For example, you really can't draw a straight line along a body tube without a metal angle device. You you try to use a door jam -- or worse yet, a regular old ruler. The end result is a crooked line.

The same thing goes for not having simple things like CyA applicator tips or using markers instead of pencils. I've found that as my skill level has increased, so too has the tools in my arsenal. Some tools are simple, some are a bit more complex.

2. Not having the proper consumable supplies like glue, sand paper, solvents, tapes and compatible paints. If you don't bother to buy the right supplies, you again end up using something that you have laying around in your shop. That can lead to disaster. I myself have ruined many models because I used two different brands of paint, and then watched the surface craze like an orange peal because of their incompatibility.

3. Even if you have all the right tools and materials, it is still very possible to mess up the rocket. That is because you may not know "how" to use the items. This is called knowing the proper techniques.

In last week's newsletter, I talked about how I only use "thin" CyA adhesive. I got quite a few emails from folks saying that they only made a mess when they used the thin variety. So they would only buy the thickest variety of CyA. I had to sit back and think why they are so adverse to thin CyA? The answer is that they don't know the proper techniques to use the thin variety.

Learning the techniques is more important than having the best tools or supplies. I've seen people make gorgeous rockets out of paper towel tubes and other odds-and-ends. They are able to do this because they know the techniques to transform them into works of art.

Unfortunately, learning the techniques is very time consuming. If you're in a hurry, you'll just blow through this process and use those rudimentary skills that you've used in the past. "As long as it works," you may say to yourself to justify the process.

If you truly want to learn the techniques, you have to either do a lot of experimenting (and be willing to accept the poor outcomes at least 3/4 the time), or get instruction from a person that is more expert than you are. This is why I really urge younger modelers to get my video book: "Building Skill Level 1 Model Rockets." It shows you the techniques.

From my own experience, I'd rather watch an expert show me the techniques than to read about it in text form. "Seeing" how it is done takes away any "guessing" that might arise if you don't understand what you've read in text. If you don't have the video book yet, you can get more information about it at:

http://www.apogeerockets.com/skill_level_1_video.asp

Often times, you can read about how to do something, but until you actually see the process, it doesn't really click in

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your brain. This happened to me recently when I was trying a new technique to make body tubes from very thin sheets of plywood. My first attempts were disasters. But then I saw a person that was an expert at the process make one. Once I witnessed that, it all fell into place.

Occasionally I get to put on a building session for a local club. The expressions on the faces of people after they've learned the proper building techniques is priceless. I know that those people will leave the sessions with the knowledge to build better (and safer) model rockets. That is why I'd like you to consider pushing your club to hold a building session. I'm sure that you'll learn more about rocketry in a couple of hours than you'll get in months of trial and error working by yourself.

One last thing about knowing the proper building techniques. That is it will usually save you a lot of time in the long run. As a simple example; if you know how to apply just the right amount of glue to the rocket -- you won't spend hours and hours waiting for too much glue to harden. This is how knowing techniques saves you time. So actually, you'll be doing yourself a favor by learning proper techniques.

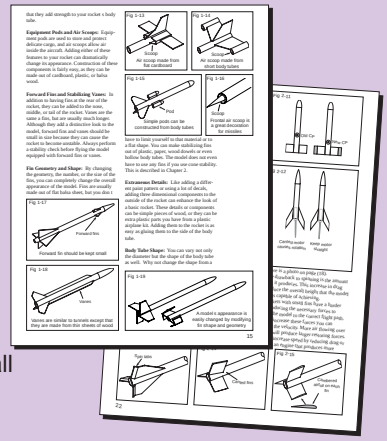
In conclusion, I hope that you will have some patience when you build your next rocket kit. It will help you prevent some disasters that may ruin the rocket before you fly it.

About the Author:

Tim Van Milligan 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.

So you think you know about designing rockets? Here's a test:

- What thickness of wood should you use for fins a rocket powered by a D motor?
- What are the nine types of fin construction?
- What are the other five different recovery methods besides: parachute, streamer, glider, and helicopter recovery?
- What size wing do you need for a rocket glider?
- How does high power construction differ from small rockets?



How did you do? If you couldn't answer them, you'll be happy to know the answers are in the book *Model Rocket Design & Construction.* It was written for modelers that want to build their own designs.

For more information, or to order your own copy, see our web site at: www.ApogeeRockets.com/design_book.asp

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