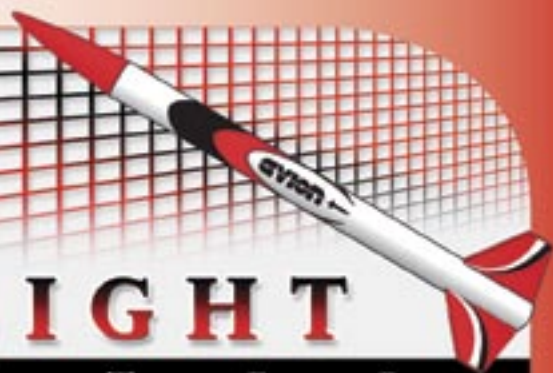


PEAK OF FLIGHT

N E W S L E T T E R



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***Paint Scheming:
Ideas For Adding
Eye-Popping
Decoration to Your
Rockets***



Cover Photo: Semroc Lil' Hustler rocket kit. Get yours at:

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Paint Scheming: Ideas For Adding Eye-Popping Decoration To Your Rockets

By Vince Huegele

There's a lot mentioned in the rocketry resources about how to finish a rocket, get a good smooth surface and lay down a clean paint job, but not much is said on the style and pattern of the colors. If you want your rocket to really look good on the shelf, on the pad, or in the air, you need to pick a good paint scheme. This is particularly important if you have the basic 3FNC (three fins and a nose cone) design. Some modelers just cover their rocket in a single color and are satisfied with that. Others will paint the rocket with the style given in that kit. With a little more thought and some simple work, a good rocket can look great.

Simple Sport Colors

The simplest scheme to paint that is very popular is to have a light colored body and a dark nose and matching fins. Apply a primary light color first to the body, then mask it for painting the second darker one. Use two complementary colors that should be paired like school or team colors, but many combinations will work. Some suggestions that go with commonly available paint colors would be White/red, Black/red, Silver/blue, or Yellow/orange. Get ideas of color sets by looking at model cars or other sports products. If you have an eye for picking paint you can try the various flavors of orange and white or a red and gold combination like the Ironman suit. You'll soon develop a sense for what matches, or you can just copy a color pair you like.



Simple masking on a two color scheme adds a sporty racing stripe on the fins.

Detail painting

After you've decided on the colors you can further dress up your bird with some detailing. With a strip of masking tape, you can paint a horizontal ring stripe next to the tail or nose of the same color. With more masking, you can create a roll pattern. This pattern is just alternating longitudinal stripes and bars. If you make a second row of stripes it will form a semi checkerboard. This type pattern was invented by early rocket scientists to indicate to ground observers if the rocket



Adding bars and rings can break up a long tube into a more interesting appearance.



was rolling in flight. You can also make a roll pattern from trimmed monocoat or modeling decorator tape applied after the painting if you don't want to make the stripes the same color. Get a roll of glossy or flat black tape to sharpen up your models.

A less complicated but

This model has the airframe panel sections accented in alternating colors.

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About this Newsletter

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Paint Scheming

equally striking pattern is the 'harlequin'. This is painting body sections in halves or quarters of alternating colors to create contrasting panel squares as if you wrapped the tube in a large checkerboard. It's easy to mask and paint this pattern and it gives the model a very distinct appearance. Rockets like the V-2 and Black Brant used this scheme.

Another simple technique is to highlight or accent the fin edges or tips. Mask the fins with tape and paint the exposed area with a contrasting color. Feel free to borrow from patterns on aircraft or racing stripes from cars.

There are several popular rocket decorating 'themes' that can be defined into these categories.

The Military Look

This motif is based on rockets like the Phoenix, ARM, or Patriot missiles and features roll patterns, stripes, military labels, stencil lettering or numbering. Colors are white, black, gray, silver, olive, missile orange, or red. Note an interesting scheme from some

This standard kit is dressed up to take on a military feel.

missile and use it on your rocket whether the scale is close or not. Just a few similar military tags will make the look.

Future Fantasy

This style comes from Star Trek, Battlestar Galactica, or Star Wars vehicles and they will often be white or silver. Use exotic geometric patterns with futuristic or alien decals to make your rocket look like a fictional space ship. Add detailing of canopies, ports, rivets or hatches with a fine tip marker or trim tape. You can borrow concepts from several of your favorite craft and kludge them together on your creation.

Vintage NASA

This theme resembles the Redstone, Saturn, and other historic satellite and manned space boosters. Make your model white with black segments and bold black roll stripes. Wrap a 'barber pole' stripe around the body. Add flags, red USA lettering, insignia and silver semi scale details. See the photo on the next page for an example.



Decals make this kit bash design look like a futuristic space liner.



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Quarter shown for size comparison

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Paint Scheming

Where'd It Go?

Besides just looking good, the other reason to think about how to paint your rocket is for visibility. A color or pattern that looks great on a desktop model might become hard to see up in the air. True scale shades of aircraft gray



Black and white patterns makes for a classic NASA look.

and olive drab will have your rocket vanish against the sky and on the ground. Many of the actual rocket schemes developed are specifically for visibility for test rounds or manned vehicles, or invisibly for field weapons. Choose the former for your flying model.

Select colors that are a contrast against your flight background. Consider that a white or yellow rocket may stand out well against a deep blue sky, but it is not good against passing clouds or on an overcast day. A solid green rocket will be a 'loser' if it lands in the bushes or grass. The best color for overall visibility has been shown to be red or orange. The rocket will have the color contrast on a clear sky and have a dark contrast on a cloudy sky. It will also show up on the ground as a contrast to the natural earth shades. Just a few touches of some bright color will help you greatly in tracking and recovering your model regardless of its size.



Strong color contrasts increase a bird's visibility and highlighting sharpens the look of a simple design.

With the Kids

If you're building rockets with a student class or your own kids, half of their construction energy will go into the decorating process, so be ready for what they want. Boys will like spray cans of red and black paint, but be sure to have pink and purple paint for the young ladies. Marker

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Paint Scheming

pens will make coloring and detailing easier for them as they customize their rockets, which is important if you're all building the same kit from a bulk pack. Kids will go nuts over peel and stick decals of thunderbolts, flames, stars, and rainbows.

Sketch Before You Etch

Once you have a general idea of how you might want to decorate your rocket, draw it out on a page or a screen to preview the scheme. Start with the outline of your rocket you can get from the manufacturer's instruction pages or from a Rocksim layout. Make several copies of the outline for comparing your

different design iterations. Then add the color and pattern and adjust the drawing to look the way you want. When you complete the scheme, reference the final drawing for where to mask the rocket for painting or

positioning the trim or decals. Remember, it's easy to paint the parts that separate a different color, so make your pattern work into the existing pieces of your rocket.

You can also use RockSim to get a 3D look of your completed rocket with the decals applied like the image shown above. For information on how to do this, see *Peak-of-Flight* Newsletter #211 at: www.ApogeeRockets.com/education/downloads/Newsletter211.pdf



You can use RockSim to lay out your paint scheme before you even build the rocket.

The style is as important as the finish



Above: Sometimes you can deliberately leave off the masking and have a spray over effect.

Right: Vince flying his Aerotech Mustang.

This article is to give you ideas about the style and look of your rocket, so use it with other articles on techniques on how to finish and paint. You've put a lot of work into the aerodynamic and structural design of your rocket, so spend some time on the paint scheme. There are no limits on how you can decorate your rocket to make it look sharp, so get creative and aim high.



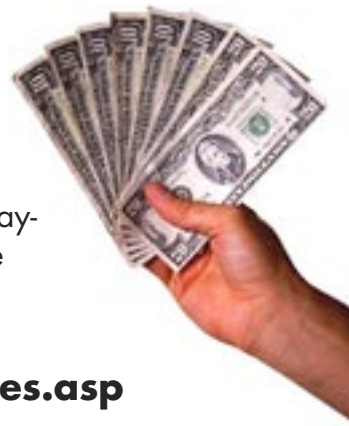
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Evoking Emotions Make Memorable Rockets

By Tim Van Milligan

When I first read Vince's article about paint schemes, it reminded me of something that I wrote a million years ago when I worked as a rocket designer at Estes Industries.

As a new product designer, I wanted to learn what made the difference between a good rocket and a great one. I did like Vince, and started writing down the different paint schemes that I could identify. I came up with many similar ones to what you've read in Vince's article.

What Vince is getting at is that the paint scheme you use on your rocket sparks a specific type of emotion. And that is important, because it is the "emotions" that your mind generates that make the rocket memorable. The stronger the emotions that are evoked, the "greater" the rocket appears compared to other rockets that have different paint schemes.

So in this article, I'll pick up where Vince left off, and try to tell you what kind of emotions that various decorations evoke in people. I'll list my personal classifications of the different themes of rockets and the feelings that they create in others. This list is by no means complete, and will probably be different from what you come up yourself. After all, my emotions are going to be different from yours.

1. "Art Deco" or "Retro space." In this theme category, you try to make the rocket look like it came from the sci-fi movies of the 50's. They are characterized by having a very sleek and graceful shape, without much detail. Rockets with curved boattails are big in this theme category. Think

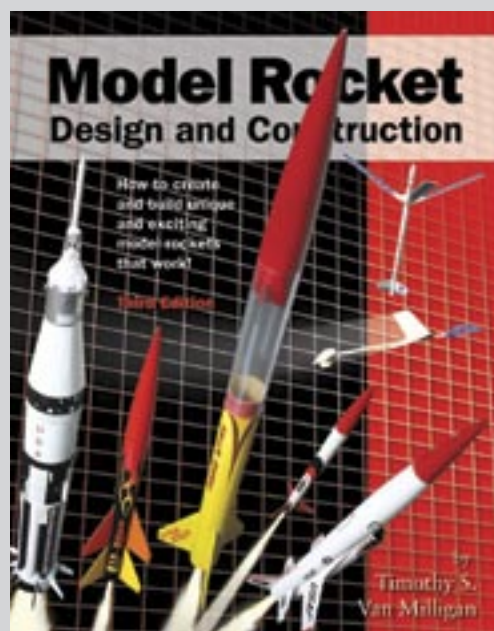
of the German V2 missile shape (not the color pattern). It would be in this category. The feeling that is trying to be evoked is one of optimism for the future.

2. "Real-life space program." In real space-faring rockets, the vehicles are not swoopy at all. They are rather simple geometric shapes. For example, the nose cones tend to be cone shaped instead of in gradual curves. But they have lots of surface details, like corrugations, hatches, rivets, and rough texture. (To add texture, see my YouTube video at: www.ApogeeRockets.com/Rocketry_Videos/Rocketry_Video_37.asp).

These rockets rarely have boattails, but they may incorporate conical transition sections that allow for body tube diameter variation. Strap-on pods and booster engines would also be common, along with generally small-sized fins. Color and decal patterns play a big role in this theme type. You'll see a lot of national insignia and geometric block patterns, like checkerboards and stripes. The feeling that goes along with this category is one of national pride. Most scale models of vehicles that carried men into space fall into this theme category.

3. "Military styling." The feeling here is one of power and might. This rocket has a seriously bad-attitude, and you better watch out. An example might be an SR-71 airplane that is modified for rocket power. Or it could be something like a scale model of an air-to-air missile. The paint scheme with its decals, and not the shape, are the key factor in this

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Model Rocket Design and Construction

By Timothy S. Van Milligan

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Emotion Stimulating Rockets

genre of rocket. Dark colors with lots of national insignia are common. Camouflage themes are common, such as dull grey for the naval version, and forest camo patterns for the army versions.

This theme can be projected into the future too. I would classify the Buck Rogers and Battlestar Gallactica fighters in the military-styling theme.

4. "Plausible Real-Life Space." These are futuristic models such as a lander that would touch down on Mars. Another type of model that would fit this theme would be a futuristic business-jet. Basically, anything that could actually be in development by NASA or a commercial company might fit well in this category. The feeling that is trying to be evoked by these rockets is one of a "can-do attitude." In other words, we can do this in real life if we just had enough money to do it.

5. "Fantasy Space". These are rockets that look like they came out of sci-fi films like Star Wars and Star Trek. It would break the laws of physics to make them actually work. This is a big catch-all category, as there is no specific shape or color scheme that is common. The feeling trying to be evoked with the sci-fi genre is one of "what if?" and "let your imagination run wild."

6. "Pure Fun or Silliness." In this theme category, you're just having fun. I would place most odd-rocs in this category. They seem to have no sense or purpose to them. While they are fun to look at, it is my opinion that don't evoke

strong feelings in other spectators. That makes them less memorable to others. But that does not mean they aren't fun for their creator. They are fun, and they are a worthy investment of your time.

7. "Educational." This is more of a marketing gimmick than a style of rocket. If you look through old catalogs and you see something like a man wearing a doctor's white lab coat, it would probably fall into this category. The emotion trying to be generated is the most important thing. The company is trying to say to parents, "your child could grow up to be a famous scientist if they use this rocket."

8. "Cheesecake" This is another marketing gimmick category, more than a style of rocket. It is the emotion trying to be stimulated by the designer of sex appeal and machoism. Nothing wrong with that, as it can make for a very memorable rocket.

9. "Dark & Black" This theme category is an offshoot of Fantasy Space, but is characterized by very dark colors. Goth and other dark and provocative rockets would fit this category. The feeling the designer is trying to get across is one of the villain -- in other words, a sinister feeling. Based on experience, the color combination of black and silver tend to sell more rocket kits using this genre of model.

10. Cool Dude Theme! Characterized by skate-board or race-car graphics. Estes seems to be using this theme on a lot of their E2X kits, for example, prismatic graphics. I don't particularly like this theme, because the emotions are

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Emotion Stimulating Rockets

fleeting and not powerful. But the bright colors catch the youngster's eye. They are trying to stimulate the feeling of an "easy-to-build" kit.

11. Patriotic -- The hero syndrome. Red, White & Blue rockets.

12. Fluff & Feathers -- Think: Barbie Dolls. Characterized by the colors light purple and pink. In my opinion, this theme really stinks for rocketry because it is a patronizing attempt to go after the female market segment. I think women can see through this, as a male would avoid buying a Barbie doll if you dressed it up in man-clothes.

13. Middle Earth Fantasy -- dark, mystic and magical. The Estes Wizard tries to use this theme. What kind of special powers does the person have that wields this rocket. Sort of like what a Harry Potter rocket would look like if you created one. The colors black and dark purple or dark blue would be good for this type of rocket.

Start Your Own Classification System

Now it is your turn. I'd like to see what you come up with. There are so many rockets out there, that you can easily start your own list of emotions that you feel when you look at them.

As you look down the list of rockets on our web site at: www.ApogeeRockets.com/All_rocket_kits.asp, ask yourself what emotions are stimulated in you by the rockets. This is what I think that sells a rocket.

About The Author:

Tim Van Milligan (a.k.a. "Mr. Rocket") is a real rocket scientist who likes 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. 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 a FREE e-zine newsletter about model rockets. You can subscribe to the e-zine at the Apogee Components web site or by sending an e-mail to: ezine@apogeerockets.com with "SUBSCRIBE" as the subject line of the message.

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