

Some thoughts on color and finish

Category: Scale Articles

Created on Thursday, 05 August 2010 02:00

Written by Ron Peterka

Although I am primarily interested in RC scale modeling, I do pay attention to other forms of modeling just in case they have some suggestions that might improve my own skills. A friend gave me a printout from a web site devoted to plastic scale modeling and the subject was "A Matter of Color". The website the article came from is www.cybermodeler.com, where the attention is to absolute scale modeling in miniature. It got me thinking.

Maybe I can improve my competition static score by improving some aspect of the judging? At the last Scalemasters Championships our Team Scale static score was pretty good at 97.25 points out of a possible 100, BUT, we lost first place by only 0.25 points! Intrigued by the possibility of one more point in our color and/or our finish score I started looking into color and how it is judged.

In the Scalemasters competition color of finish is worth up to 5 points and the AMA static rules lump color, finish, and markings under a blanket class for 30 total points. The Scalemasters scores finish separately for up to 10 points. Color(5), finish(10), and markings(10) in Scalemasters can total up to 25 points.

Every scale modeler has to come to grips with color because we are all trying to replicate a full-scale aircraft in every aspect. Color is a major factor and in the case of military aircraft, National Standards usually mandate colors and markings.

The problem begins with our perception of color. As infants we are trained to describe that small portion of the light spectrum that we can perceive in terms of "standard" colors – red, green, blue, yellow, and so on. Later, we refined our perception to discern subtle differences and relationships of color to sound, motion, and integration. Camouflage is a blend of several, or all, of these integrations.

While artists have used subtle color variations for thousands of years, a scientific description of any particular color or colors became necessary to develop a 'standard' for replicating a desired color without depending on the vagaries of human eyesight. Near the beginning of the 20th Century research by Professor Albert Munsell produced a definitive system of measuring color to reliably catalog and replicate any particular color sample. The cybermodeler web site gives much more historical information as well as offering color samples of many military and civilian standards that can be used for modeling.

As far as judging model colors we also have to factor in the prime coats used, since almost all paints have pigments that are to one degree or another transparent and show through the finish coats. This affects color chip samples too so a paint used over your model may not exactly match the color chip used due to different primed surface color unless you have used the exact same primer color. It becomes even more complicated when you factor in the different kinds of lighting used for the judging.

Light is measured in units of 'color temperature' of Kelvin (K) with 'white' light, made up of red, blue, and green frequencies arbitrarily assigned a 'K' of 5500. The lower the temperature the 'cooler' the light, the 'redder' or 'warmer' appearing the light. The higher the color temperature, the bluer or hotter the appearance of the light will be. Light sources affect color temperature. Tungsten incandescent lamps provide a distinct yellow cast to the light they produce. Florescent lights cast a greenish light. Early afternoon and early evening light is 'warmer' due to the distance the light passes through the atmosphere. So the color of light reflecting from your model depends upon so many variables it sounds impossible to get one color to match every lighting condition. Oh, I almost forgot, the distance from the model to the judge's eyes will mute the color the farther the distance of viewing.

Some paint manufacturers factor in distance muting when they produce color chips for color charts. Weathering is a whole different subject and in some respects a big can of worms. It's difficult and controversial in some cases.

The good news is that in the Scalemasters program the color score is limited to only 5 points while the AMA score is indefinite as to the quality of color alone affecting the static score. If you want a perfect paint job or color scheme there is much to study and learn. If you want to compete in model competition, the best thing to do is to document the colors for your model and spend the most effort on marking accuracy and the match of the finish quality.

Good luck with your efforts to 'match' the exact color of your model to the full- scale aircraft. I'm thinking about taking up knitting myself.

Ron Peterka