

Scale model aircraft are a great way, and sometimes the only way, to see a historical aircraft fly. Invariably at a Fly-In, the aircraft that gets the most attention is the aircraft with the top notch weathering, rivet detail, and fully instrumented cockpit. The ultimate compliment from spectators is "It looks like the real thing!". Unfortunately, I find that pilot figure usually doesn't look like the real thing. I think if the model looks real, so should the pilot! I absolutely CRINGE when I see a Snoopy (or other) plush toy in the cockpit of a scale aircraft!!

With that philosophy, I created my own pilot figure company called Best Pilots. I sculpt, make molds, cast and paint the pilot figures so that they look as realistic as possible. Since I have a degree in illustration and paint quite a few pilots a year, I thought I could share some of my knowledge gathered over years with my fellow RC pilots.

### **A most important first step:**

Clean the figure! Before painting the figure, you really have to insure it is free from any mold release agents. If you don't clean it, the paint won't adhere to the surface. Also at this time, remove all flashing and traces of the seams from the molding process. To clean the figure, I use rubbing alcohol and an old toothbrush and give him a good scrubbin'. I've also used soap and water and even carburetor cleaner all to good effect on resin figures.

You should probably plan for about a weekend to paint your pilot. Not much of a time investment when you consider all the time, effort and money in your scale warbird.

We are going to use my latest pilot figure from Best Pilots, RAF Ace, Sailor Malan as our subject. I will from time to time show other Best Pilot figures as well not only to illustrate different techniques but also take advantage of this wonderful marketing opportunity!

### **OMG! Airbrush!!**

First we are going to use an airbrush. Airbrushes sometimes make me madder than a stripped servo gear, but this step is pretty painless. We are aiming for a light flesh color, somewhere around Charlie Brown and one of those vampires from Twilight. Don't worry if the skin color is too light at this stage because the next steps will make it look right.

I almost exclusively use Model Masters Acrylic (MMA) model paints by Testors. I like that they are water soluble and my local hobby shop has a great selection of colors to choose from. My mix for the base coat of Caucasian skin (the word flesh creeps me out for some reason), is: 1 part MMA Flesh (eck, that word), 3 parts MMA Flat White and 1 part MMA Wood (yes, Wood. We are just worried about the actual color here not the name. I find this is a good ochre color and it won't make your pilot look like he is made of wood!) Pour part of the Skin color in the airbrush cup and fill



with an equal amount of Windex. Yep! plain old Windex window cleaner. The Windex thins the acrylic and helps keep it from drying so quickly when it goes through the airbrush. Airbrush the skin color in very thin layers. It is better to do multiple thin layers than one thick, and usually runny, one. This should give us a very even base coat without obliterating all that nice detail I sculpt into Best Pilots faces. It also gives the surface a microscopic “tooth” for the Pastels in the next step to cling to. Don’t forget to clean your airbrush when complete. If one could only invent an airbrush that didn’t need to be cleaned he would be a millionaire!

### Pastels?

Since I paint a lot of pilots, I need to do it fairly quickly. Using pastels or chalk, is the quickest technique I have found thus far to achieve that subtle airbrushed look. People think Pastels are not very lightfast or durable, but they actually are the most durable medium in the art world since they are practically pure pigment. When applied, it is surprisingly durable, but becomes permanent only when under a protective clear coat.



Pastel colors we need - Burnt Umber, Dark Rose, Burnt Sienna, Light Ochre, Orange, Red. Using a fine piece of Sandpaper as a pallet, grind some of the chalk onto the sandpaper creating a fine dust of pigment. I hate to admit it, but I found that using a make-up brush (gasp) works very well for this part, because as much as my he-manliness detest the idea, applying this pigment is a lot like, well - is exactly like, applying -dare I say- make-up! Never mind getting thrown out of the RC “he-man club” for applying “make-up” to your pilot, when they see how good he looks, they will let you back in.



Load the brush with **Burnt Umber** dust and lightly brush anywhere there is a shadow area on the head; eye sockets, nostrils, under the chin, under the helmet all the way around the neck and a little around the eyebrows. This area around the eyebrows will help the painted on eyebrows blend in to the face better. Subtlety is the KEY here! You don’t want to see a big change. My rule is as soon as I see the color start to change, STOP. HE should look like he was down in a coal mine for about 20 minutes, not all day!



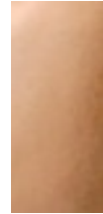
### **A very realistic effect that makes separates the men from the boys.**

- If you become very observant about the subtle changes in color in people’s faces, you will see that most men (and some women in Arkansas!) have varying degrees of a beard shadow. I think this shade helps make the figure look the most “real”. Dust on the Burnt Umber to simulate shaved facial hair. The heavier the application the more “surly” your pilot will look. I would err on



the side of lighter application for blond pilots and heavier application for dark haired pilots.

- **A word about gradients:** The key to creating an intriguing portrait is to have nice smooth gradients. For some reason, our eyes are drawn to a smooth gradient rather than a constant color. Always apply your pigment so that it is darker in the shadows and deeper areas then “feather” the pigment out lighter as it moves into the lighter and/or higher areas. This accents the features or “topography” of the figure and makes up for the figure being smaller. Since the figure is smaller, it can’t have shadows as dark as its full-scale counter part.



Next, brush out the last color used before moving on to the next. Do NOT wash the brush. A wet brush and pastel dust is not a good thing here! Just swipe the dry brush back and forth on an old clean T-shirt until you don’t see anymore of the previous color.

This is a small area to do, so it will only take a second. Load the make-up brush with Dark Rose pastel dust. Now dust that inside between the lips. This will make the lips look more natural with a dark reddish color there. Don’t go crazy, just barely change the color to differentiate the lips.

Now load the brush with **Burnt Siena**. This is our mid-color tone, and the “work-horse” of the pastel portrait colors. This will be applied to areas around the nose, on the nose (a lot of people’s noses are more red than the rest of their face), under and up to cheekbones, under the eyes, under the jaw and around the neck. Don’t forget the back of the neck! Just give a few brushes up and down to give it some tonal change and that will do the job. You should notice the pastel clinging to the texture left by the airbrush. You should also see your pilot figure looking less anemic.

A touch of **Orange** pastel tends to give just a touch of life to the figure. Areas to hit with orange are a touch at the temples, slight bit on the cheekbones and upper side of the chin.

This is optional, but you can also apply a light yellow/orange or **Pumpkin** color the upper cheekbone and area between the mouth and chin. I don’t know why, but in photos some people seem to have a little of this color there. Hey, it seems to work, and it adds a more complex/richer skin tone to your pilot.

The last application is **Red** pastel. This stuff is powerful and if you aren’t careful with it, your pilot could look like he is ready to audition for Cirque du Soleil in Vegas! Just touch a pin head bit of pastel just under the highest point of the cheek. Not a circle on the highest cheek, that will make him ready for the circus, but just under and



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blend that in. Next is just a touch at the outermost part of the lower lip. Blend that in. None is needed on the upper lip, because it then starts to look like lip stick. Lipstick on your male pilot figure will get you thrown out of the “he-man” RC club!

Okay, pastels are all in place. Your pilot’s complexion should look like he has been out in the sun a bit, and is ready to fly. But first, and this is critical, give the face a coating of **MMA Clear Flat** through the airbrush. Dulcoat will work, and is quicker, but I find the MMA achieves a dead-flat finish when misted through the airbrush. Stir it **WELL** before using to distribute the flattening agents and pour in the cup. Just mist the flat on, do not put on a heavy coat. Two very light coats is extremely effective. This seals the pastels and sort of blends them together a bit as well.

### EYES

Eyes are probably the most challenging part of painting pilots. One of the things I did when sculpting my pilots is sculpt the eye detail right into the figure. That way you are assured to get the pupils in the correct place and not have a cross-eyed pilot! Get out the smallest detail brush you can find and make sure it goes to a point. Also, it may be a good idea to do this step a at least an hour after your last caffeinated beverage, for you will need a steady hand.

Apply Flat Black to the entire inside upper eyelid for eyelashes. Thicker to the outside of the eye and thinner towards the nose. Next paint the entire pupil and iris of the eye. I don’t differentiate the iris from the pupil. It very challenging to do and at this scale, the results aren’t worth the effort. The white parts of the eyes are **NEVER** painted white. White is just way too white. My favorite color for this is MMA Sand. It is lighter than the skin tone and that is what you are shooting for. If you don’t fill the white out all the way to the eyelids, that is better than getting any on the lids.

A lot of doll makers paint a highlight on the iris with a dot of pure white. I used to do that but found at the end of the day, it just looked kind of fake, so I skip that little step.

### EYEBROWS

In case you haven’t noticed, eyebrows are made up of individual hairs. We don’t want our pilot’s brows to look painted-on like an elderly lady going to church . Yikes! This is where the dusting of the burnt umber pastel comes in handy because it will help soften the transition between the painted eyebrows and skin.



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Get out that superfine brush and paint the eyebrow almost hair by hair. Definitely paint it the way the hair grows. Use the sculpted in hair as a guide and let the paint flow in the recesses. You don't want a solid border defining the brow. It should be broken to suggest hair. Start with burnt umber to define the brows. Make sure they are even and somewhat symmetrical. Then paint in a thin bit of AMA Wood to highlight the area that gets lighter as it goes toward the side of the face. Again, use the sculpted in detail to your advantage. Let the detail do the work, that's why I put it there!



That should complete the face! If you start to feel like someone is watching you as you work, then you know you did a good job. My wife came into my workshop one evening after I had about 7 pilot heads completed. She said she had to leave because they looked so real they were "creeping" her out. So now I always keep a few painted heads lying on my work area... just kidding honey!



## HELMET

I put a huge amount of detail in the helmets of my pilots because that is the topmost thing the viewed when your pilot is sitting in the cockpit. Most flight helmets are leather. The following technique works like magic in replicating leather of all kinds, but it works the best when your pilot figure has leather texture molded in the helmet.



First paint the helmet, earphones and goggle frames flat black. When painting areas like this, it is quicker to paint where the black meets another color with a fine brush and then fill in with a larger brush. Kind of like coloring within the lines in a coloring book. After all is painted flat black and dry we are going to learn a technique called dry brushing.

Dry Brushing is a fairly easy technique to highlight raised detail. A medium soft flat brush works perfectly. Mine is all curled out at the ends from use, which actually makes it work better. The trick is to not let a lot of paint come off the brush. To help this, just barely dip the tip of your brush into the paint. You only want about a 1/16 of an inch of paint on brush. In this instance, the color we are going to paint Sailor's leather helmet is, uh, MMA Leather. After dipping your brush ever so slightly into the leather paint, brush it on an old clean T-shirt until there is almost no paint coming off the brush. (If you have visitors in your painting area, be sure to use an old T-shirt and not underwear... for obvious reasons.) Lightly whisk the brush across the area to be leather. Magic starts to happen and



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the black helmet starts to look just like leather. For a darker leather helmet, use less paint and for a more brown leather helmet use more. This technique takes the most time, but it is the most rewarding for the realistic effect achieved.

The Best Pilots Bob Sweeney USAAF figure uses the same technique on his helmet.

The Best Pilots Pappy Boyington uses an altogether different technique since navy/marine flying helmets were cloth. But we do use the Dry brush technique to get the earmuffs to look like leather that house the headphones.

To get Pappy's helmet to look real, first paint the cloth area MMA Dark Tan. To bring out the detail, we apply a wash.

**-Washes-** A wash is simply thinned down paint that is very watery. This allows the pigment to run into lower areas like stitches, ridges and seams to make that detail "pop". I discovered a very useful wash that works a bit better than plain water. We'll call it Best Pilot's Wash. To make, mix slowly- no bubbles - 5 parts water and 1 part Future floor polish in an empty medicine bottle or similar container. The Future is a well-used magical liquid used by fine scale modelers for years, and they are still discovering new uses for this liquid in modeling. Check it out online. The stuff is pure acrylic so it mixes great with AMA Acrylic paint. When used in Best Pilot's Wash, it tends to let the paint pigment settle into the crevices better and not creep back out like it would if using plain water. That's my theory anyway. Only drawback, if there is one, is it leaves a shiny surface which will be corrected later with the flat clear coat.

Take a drop or two of Best Pilot's Wash and add just a tiny drop of burnt umber so that you get a light brown transparent puddle. Take that and wash it over Pappy's helmet, taking care to make sure it flows in all seams and NOT over the face or skin areas. Gotta be careful with that. I've noticed that the pilots in the South Pacific had prominent sweat stains around the goggles on their helmets. Something to do with flying and fighting in a *tropical environment tends to make one sweat!* To achieve this effect, simply wash a layer of burnt umber and Best Pilots Wash in those areas. Usually about three layers will get the effect.



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MASTER TIP- Dry Brushing brings out raised areas of detail and mimics highlighting and fading. Washes brings out recessed areas of details and mimics shadows. Drybrush = light, Washes = Shadow

To finish the helmet, you can *lightly* dry brush a bit of light tan on the seams and straps that hold the goggles on. This makes those details stand out realistically and adds to a more complex color variation.

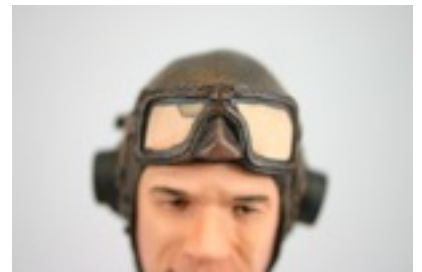
### Goggles

Straps - The goggle straps on Sailor were a bit more complex than his American ally's. They were part cloth covered elastic and leather. For the cloth part I painted it with MMA Dark Tan and then applied a very thin Best Pilot's wash with a bit of Burnt Umber.

The leather part of the strap is painted MMA Flat Black and then dry brushed with MMA Leather mixed with a bit of Burnt Sienna for an almost wine color. This gives a nice variation in leathers and is historically accurate.

The goggle frames are painted with a base coat of Flat Black (don't paint the lens area yet!) and dry brushed with the same wine-*ish* color brown.

Bob's goggle straps are a base of MMA Dark Tan with a very thin Best Pilot's wash with a bit of Burnt Umber.



Bob's goggle frames are flat

black with a bit of grey *lightly* dry brushed overall. (don't paint the lens area yet!)

Pappy's goggle straps are a base of MMA Flat White with a very thin Best Pilot's wash with a bit of Dark Grey.

Pappy's goggle frames are MMA Neutral Grey dry brushed with MMA Flat Whit

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### HEADPHONES

The headphones are left black. For extra detail, dry brush them lightly with a touch of grey, just the upper area and seams. There are two screws on the headphones, to give them a bit of a metallic look, I touched them with a metallic silver colored pencil. Hey! No brush to clean!



### CLEAR COAT

Now is the time to put a protective coat of MMA FLat Clear on the helmet. If it mists onto the pilots face that is cool, no problem because that helps protect the painted on eyes and eyebrows. Oh, be sure to stir the Flat Clear really good before using it. All the stuff that makes it "flat" usually settles to the bottom so stir it up good.



Metalllic areas of the helmets, buttons, snaps, and buckles usually have to painted with uh, *metallic* paint. Before painting metallic, make sure they are first painted flat black. This works as a kind of "pre-wash" and defines details. As much as I like the Acrylic paint, Acrylic Metallics just don't cover or look as realistic as the Enamel Metallic paints :( So break out a detail brush that is just for enamels and paint those areas Testors Enamel Steel and/ or Testors Enamel Gold. It is best to use this paint sparingly and almost dry brush it on the area to be painted. Beware of getting this paint on your fingers! If you aren't careful, your pilot could be covered in accidental "sequins" which would probably be distracting in combat!



### Lenses

All Best Pilot figures come with a printed and laminated goggle lens. Just cut out and glue the paper lens in place. Epoxy probably works best, or even permanent two sided tape if you are "drippy" with your epoxy. The shine of the laminated paper does a convincing rendition of glass lenses. Before I thought of that trick, I used to paint each one and cover it in several coats of Future floor polish, being very careful not to have any runs! Wish I would of thought of this trick earlier!



## PAINTING THE FIGURE

Painting a figure can be broken down into about 4 steps. 1) Paint a medium base coat of the main color. 2) Choose a darker color of the main color and apply a wash and/or 3) Dry Brush a lighter color of the medium color. 4) Apply a flat clear coat. That is really it. This brings out the detail, adds interest and makes up for the smallness of the figure. As a general rule, if it gets hit by light or is the highest object, it gets a highlight. If it is in the shadow or recessed, it gets a wash. This visually exaggerates the 3-D qualities of the sculpture.

Since I sculpt the pilots for Best Pilots, and knew that I would be painting (or hoped I would be!) a lot of them, I jam-packed as much detail and texture as I could into the figures. The 3-D texture in the pilots actually does a lot of the work for you when dry brushing and applying washes. That's what makes these pilots the BEST!

Lets paint the Sailor Malan figure from Best Pilots.

## UNIFORM

As stated above, everything gets a base coat. The blue woolen uniform of the RAF gets a base coat of my own mixture for RAF blue - 5 Parts MMA Raw Umber, 3 Parts MMA Dark Blue and a drop of MMA Neutral Gray.

With the uniform base coat dry, dry brush the "hills" of the folds, tops of shoulders, and knees with a light blue made from 3 parts MMA Sand and 1 part MMA Dark Blue. This color should be about a robin egg blue. Remember to barely dip the brush tip into the paint, brush off the excess on a clean T-shirt then apply to the figure.

If you want a little more depth to the uniform, you can apply a black/blue wash in the seams and valleys of the folds in the uniforms. Using the Best Pilots wash (5 parts water, 1 part Future) will make uniform glossy, but the flat clear coat at the finish will make it dead flat and cloth like. Trust me! Really!

## MAE WEST

The life vest, also known as the "Mae West". The name of a voluptuous actress during the 30's and 40's who's figure one mimicked by wearing this puffy chested floatation device. I suppose if these were made today, they would be referred to as "Dolly Partons"? The life vest on Sailor is of the variety the RAF used during the Battle of Britain. They were essentially rubber coated canvas and it wasn't until later in the war, that they started painting them yellow for higher visibility. To achieve the color of canvas, first paint the vest MMA Tan. Give it a Wash of Best Pilot's Wash with a touch of Burnt Umber. Then dry brush with MMA Sand for highlights.



## BOOTS

Well everyone knows that black boots are painted flat black. Uh, yes and no. I stumbled upon a hyper-realistic way to paint black boots, or any black leather. First paint the boot flat black (of course) and then wash mostly Windex with a little MMA Burnt Umber mixed in, let dry and see what you think. This gives a boot a nice “lived in” look without going overboard. It just looks like black leather. Since these are Best Pilots, you can also go a little “psycho-scale” and paint the detailed soles of the boots! But why? It probably won’t ever be seen. Well, sometimes it just makes you feel good to know you care that much about the hobby... or maybe I need to see a therapist, but I’ll go with the former!

Paint the sole, not the heel (the heel was rubber), solid MMA Leather. You can dry brush it on as well, just go heavy to give it a good leather color and not fill in the stitching. And since these guys were running to their planes through rain or shine, you can dry brush your choice of a dirt color, I believe in England it is kind of chalky, over the leather sole and heel of the boot. Gives a nicely worn look to the sole of the boot.



## STOCKINGS

The white “cuffs” over the boots, were (I believe) a kind of stocking, almost like long underwear leggings that the pilot could roll up to keep his legs warm in an obviously cold cockpit. Its an art thing, but I liked the white visual break these gave between the dark boot and dark pants. To paint these give them a coat of MMA Sand, Wash with Best Pilots Wash and touch of Burnt Umber. Highlight by dry brushing with Flat white.



## GLOVES

These are *real* he-man gloves that the Brits called gauntlets! The gauntlets are probably my favorite part of this pilot figure. We are going to go for the same technique as the leather helmet just a different color. Base coat MMA Flat Black, then Dry brush with MMA Burnt Sienna. Remember to just touch the tips of the bristles in the paint and then brush them on a T-shirt until the pigment is just about gone (Tshirt, not underwear!) I usually put it on a bit heavier in this instance, and the results are



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awesome! Leather grain, stitching, pleats, wrinkles, it all shows up and looks great. Okay... maybe I do need to see a therapists. *This guy gets excited about 11/5 scale leather gloves Doc!*

### SCARF

Ah, the scarf. Is there anything else that says fighter pilot like a silk scarf? Of course this wasn't just for show, but a necessity to keep the pilots neck from being rubbed raw from the constant head turning looking for bogeys. You can get as fancy as you wish with the color of these. I noticed that some of the RAF pilots had patterned scarfs of different colors. For most pilots, they used silk from old parachutes, which were mostly white. For Sailor's scarf we'll stick to white and paint a base coat of MMA Flat white. Then a very thin wash of Burnt Umber is applied, taking care to flow the wash into the folds and lines of the scarf. If necessary, you can go back and dry brush with Flat White again, to coax out a little more texture from the scarf.

### MISC.

Button - Flat Black base coat, dry brush with MMA leather or wood.

Tiny Leather Strap - Flat Black base coat, dry brush with MMA leather or wood.

Life Vest emergency inflate tube - Just a base coat of MMA Burnt Sienna and flat white to achieve a pinkish rusty-red color.

### PARACHUTE STRAPS

The last thing to paint before we put on the Flat Clear is the Parachute Straps. They are the highest layer on the figure and overlap everything. So they are the last to go. I have found the PERFECT color for these straps and it is... MMA RADOME TAN! This color is just the perfect bit of yellow and white to match some of the WWII color shots I have seen of parachute straps. Oh yes, I **DO** research this sort of thing. Anyway, paint on the Radome Tan, be careful not to paint anything but the straps. Try not to fill in all the little notches in the straps that simulate stitching. You want these to stay dark to simulate the dark stitches. If you want to go a little "psycho-scale" you can give the straps a light wash of black or burnt umber, quickly wiping the was away so as not to change the color of the straps too drastically. Then dry brush highlights with flat white. I usually find that this step is not necessary. Do you notice how FINISHED the pilot looks after the straps/belts are painted? It always amazes me. Its like ZING! He's done!

Well not quite... mist on with the Airbrush MMA Flat Clear. Stir well, mist it on. Let dry and mist it on again. Be sure to NOT apply the flat clear on the Pilots head, so set that well aside, since you definitely do NOT want flat on the goggle lenses. This would destroy the shiny glass effect.

You should notice the RAF Blue of the uniform looking VERY cloth-like and more realistic than even the GI Joe-like figures wearing real cloth uniforms. Actual material

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can't be as thin as what it would if reduced down to 1/5 scale so those always looked "over-starched" and "puffy".

After the clear coat has dried, it dries in a minute or two, paint the metallic items such as the big 5 point latch and the chute strap buckles with Testor's Enamel Metallic Steel.

And there you have it. One extremely realistic pilot figure, dirty boot soles and all, that will be the envy at any RC field!