

Tech Tips 005

A help series

Dedicated to the dissemination of Detail model building methods and techniques.

Materials and methods presented here are not intended as the best or only solutions to the modeling challenge(s) discussed, rather as methods and procedures which have a proven record of success in actual use. Please keep experimenting with new materials and techniques, as this is the only way to expand the fields of knowledge.

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Brushes and Brushwork for Hand Painted Details:

Paint brushes and brushwork seems to have a very strong influence on most modelers. In my travels, many of the hobbyist and modelers I've had the pleasure of talking with have almost universally complained hand brushwork is an "art" they just didn't feel comfortable enough to attempt; hopefully this article will dispel many of the myths.

When working on a scale or historic model, how often has a third or forth color been indicated by the documentation and simply omitted because the technique for applying it just wasn't in our bag of modeling tricks? How DOES one apply those tiny details? Get the third color into that 3/32" crevice or feather out flat weathering to seem like real dirt and grime? Most of these items will be handled by a brush and a little practice. I have not met anyone who could not do decent brushwork if given a little instruction, the right tool(s) and some practice. My background is in commercial art. I am a sign painter by trade, and commercial artist by training. None of that is necessary to do good brushwork, actually it is often a hindrance. The almost obsessed terror of brushwork is not new, in fact the fear can be traced all the way back to your toddler days with everyone harping on "you must stay within the lines" Friends Fear Not for I bring you Glad tidings of what should be great JOY!!! Each and every one reading CAN and WILL be doing fine brushwork very shortly.

For openers let me give you a well kept secret. It is nearly impossible to mess up a properly prepared subject while doing detailing. If a mistake is made, simply erase it. A little mineral spirits and a clean rag are all that is required. If I may regress for just a minute: Please remember our discussions in an earlier Tech-Tip on the virtue of matte clear coats between color coats. If the last color coat has been matte clear and scotch-brited pad smoothed, your detailing "canvas" is blank, just waiting for the next item to be added. If the brush skips, or a drop is applied in the wrong place, or you just don't like the application, simply wipe it away!. Use care to use only a very small amount of thinner on the clean rag, only wipe or dab once with each "clean Spot" on the rag. All signs of the misplaced material will be removed without touching the previously applied finish. SEE! Hand detailing is easy, and any error CAN be corrected until the paint has dried.

Tips on the tools, and selection:

Let's talk about the "TOOLS" before we tackle the "How and Why". Brushes are tools and as such have proper use and care. I am amazed how many good modelers believe those 10 cent plastic bristle brushes are good for model making. Please regard this item as JUNK, to be used only for the application epoxy and such.

While brushes like all tools come in varying grades of quality, unlike most tools inferior brushes will only give mediocre results even in the hands of a master. Your purchases should be based solely on quality not quantity. Buying brushes will take a little time. You will probably visit several shops and stores before making a single purchase. You will be buying by the Feel and Spring of the "Hair". Here are a couple of buying tips that may be of help.

- 1.) Never bend the hairs of any dry brush! This will damage the "memory" of the hairs, making them almost useless in keeping a fine line.
- 2.) Never "wet" a brush in the store by putting it in your mouth! You have no idea how many other people have "licked" that same brush.
- 3.) Carry a small water bottle during the quest of your brushes. Most shop and store owners will not mind your wetting of brushes in this manor as long as they see you are not bending the tips on the container sides, or jamming them into the bottom of the bottle.
- 4.) Have a small Blank unlined tablet to gently run a water line with the subject brush to observe the "flow and Holding" characteristics and "Pallet" flare of the hair.
- 5.) Always carefully return the plastic sleeve to its proper place on the ferrule, before placing an unwanted brush back in the rack. This will also make points with the management.
- 6.) Check the spring of the wet brush tip against the paper in your tablet or on the plastic ferrule cover, NOT ON YOUR OILY SKIN. Again buy good quality brushes. Brushes made of Bristle, Nylon, Rayon, or other plastic fibers are to be avoided.

If properly cared for good quality brushes will last many years. I have a few gray squirrel quills and flats in my sign kit that are well over 20 years old and still in great shape. We will discuss more on brush care and storage a little later.

The right tool for the job:

Brushes are sold by "Hair type", Shape, Size, and intended use here are some pointers on selection. It will not be necessary to purchase one of everything, I'll give a suggested list of (Starter brushes) a bit later.

Sizes: Points, Quills, Sables, fans and Liners are sold in 18/0 (18 Zero) to # 28.

Flats, Chisel point (Doe foot), Broad Strokes, and Shaders are in sizes 1/16" to 6".

Hair Types: Fine Round Points, Chisel Points, and small Flats are available in Red Sable, Brown Camel, Brown Squirrel, and Badger.

Quills, Rounds, Flats, and Broad Strokes come in Brown Camel, Brown Squirrel, Gray Squirrel, and Ox hair.

1/8" to 6" wide Flats, Fans, And Broad Strokes will have one of the following hair types; Badger, Brown Camel, Ox Hair, and a few Gray Squirrel hair types.

Hair types and uses:

Gray Squirrel Gray Squirrel is one of the very best all around materials for Brushes, and unlike some of the other Hairs the Squirrel doesn't have to die to make the brushes, just run around with a shaved tail for awhile until it grows back. It has excellent "memory"(returns to its original dry and/or wet shape) and very good spring,(allows very good lift and line control.) Quills and Flats of Gray Squirrel will allow very sharp lines in very tight places. They hold a good amount of paint and pallet to a fine edge for superb control. They are useable in water, acrylic or oil base paints and mediums. If your pocket book will allow I suggest your first brushes have Gray Squirrel hair.



LoCo & Art Sign Grey Squirrel Quills:
#0, 1, 2, 5, 6, 8, 10, 12 & 24 sizes.
Square tip, very good for detail painting.
02-01-1978



Langnickel & Grumbacher Grey Squirrel Flats:
1/8", 1/4", 3/8", 1/2", 5/8", 3/4" & 1.0"
Expensive but Worth every penny.
02-01-1978

Red Sable: All "Red Sable" brushes are now blends containing a percentage of real Sable hair (A close cousin of the Llama) with either badger or brown Camel hair. Sables are very stiff and brittle when dry. When wet they are rather soft with very little spring. Paint holding is very good and will pallet to a good fine line. Sables are available in Rounds, Flats, Chisel, and fans. These are the number one choice of the water color artist. The amount of Sable hair in the brush the finer and better they will line. More Sable hair also means the higher the price. Sables have very little spring or memory and must be cared for carefully. They are very good for extremely tiny details in the 4 to 18 zero sizes round point style.



Red Sable Flats:
Grumbacher, Martin,
ArtSign, LoCo & others.
#18.0. to #12.
5 1/4" to 3/4"
Short Hair Square Point Flats
Great for all Detail painting.
11-05-1990



Red Sable Round Points:
#1, #3, & #5
Round Point Brushes.
Nice pin point painting.
03-05-1987

Brown Squirrel & Camel: These are the third "top" choice of Hair types. Camel is somewhat coarser than Brown Squirrel with less memory and spring. Paint holding ability is close to that of Brown Squirrel. These are Oil or Oil based Acrylic paints only brushes: Neither are at all suited of water colors.



Brown Squirrel Hair Flat Brushes:
1/4", 3/8", 1/2", 3/4" & 1.0"
2nd from Bottom:
#5 Brown Camel Hair Square Point.
02-01-1978



Artist Fan Brush:
#6 Camel Hair Fan
10-10-1985

All the other Hair types and "Bristles" (Hog Hair Bristle) are used as fillers in "Economy" artist brushes and the Cheap and almost useless "Hobby" brushes we have all seen on the counters at most hobby shops. Most of the very long handle "Oil Painter Artist brushes" are mostly Hog Hair or a fine blend.



Again let me brainwash brush buyers. DECENT detail brushwork comes from DECENT tools and paints. **Buy Quality Brushes.** Stay away from any brush sold as "Bargain" or Economy. If the brush being considered is less than \$1.50 don't buy it. I have some 1-1/4" and 1-1/2" gray squirrel flats that were \$60.00 & 70.00 back in the late 1970's. It is my earnest opinion each was well worth their cost. Most Gray Squirrel Quills from "0" to #12 will run between \$2.50 and \$27.00. Sables are generally more expensive, some may give you sticker shock, I've seen 100% pure Red Sable flat listed for over \$100.00. Buy brushes a few at a time, I will leave hair type and order of importance to your wallet and intent.

Choosing the right tools:

Here is a minimum list of good brushes you should have in your cabinet for detail painting.

<u>Red Sable:</u>			
	1- 18/0 18 zero Point		
	1- 10 zero Pointed	<u>Flats:</u> 1- 1/8" Long Hair Flat	
	1- 4 zero Pointed/round	1- 1/4" " " "	
	1- 2 zero Pointed/round	1- 1/2" " " "	
<u>Quills:</u>		<u>Liners:</u> 1- #0 Very long hair	
	#0. Square tip	1- #1 " " "	
	#1 "	1- #3 " " "	
	#2 "	<u>Utility:</u> 1-1/4" Camel Flat	
	#3 "	1-1/2: " "	
	#6 "	1-3/4" " "	

The Camel utility flats are for application of 50/50 Clears, and other paint DOPES, as well as Lacquer thinner, thinned filler materials.

Other Sizes, Shapes, and hair selections will be helpful as you become more confident with brushwork. Sword Strippers very long tapered Brown Squirrel hair are very useful and come in a variety of widths for multi color camouflage work.

Now we have the Tools, let's look at some of the ways to use and care for your investments. Yes! By golly, good brushes are an investment.

The Next Step:

Practice drawing block letters with a constant "stroke" line weight. It is best to use a #2 pencil to stick draw (single line) the letters widely spaced from each other then use the brush to widen the strokes. If you practice the letters H O W S you will be certain you have used every stroke segment you will ever need to use when lettering.

The Arrows in the diagram below show the direction you will **pull** the brush, again always working toward and side to side never away from yourself. Turn the work if necessary to allow yourself to always pull never push the brush.



Working on curved or round surfaces is very difficult even for the experienced Artists, whenever possible do your lettering and detail painting on a flat piece of decal material or clear Mylar before applying it to the curved surface. After the paint has had overnight to dry cut and apply to the finished model.

Care and Cleaning:

The longevity of your brushes will depend a great deal on how they are treated and cared for. Always keep your brushes clean. After every use thoroughly clean each brush all the way **into** the ferrule. Red Sable and other watercolor brushes should never be used in any oil based medium unless they will never be used in watercolors or water based colors again. Keep in mind oil and water do not mix, The reasoning is pretty straight forward, once the hairs of a brush have absorbed any oil it is impossible to remove all the residue, the next application of water color will streak and smear, fish eye and do all sorts of nasty things. If you plan to use both oil and water base paints you will need brushes for each type. Mistakes with oil and water base materials can cause paint failure and may ruin a really good detail job.

Brushes used in oil based mediums.

Oil medium brushes should be cleaned with turpentine, mineral spirits or other brush cleaning thinners. Check the label to see the material can be used for cleaning, as some of the "fast dry" and Reducers will breakdown the fibers in the hairs, damaging or destroying the brush. First wipe as much paint as practical with one or two pulls between the thumb and fingers covered with a paint rag, trying not to hold the hairs so tightly that the hairs are broken or pulled out. Dip the brush in clean thinner and again pull between the thumb and fingers covered with a clean part of the rag. Repeat this process of dip and pull until all sign of paint has been removed and the rag shows only clear thinner. Moisten the hair with thinner and shape. Dip the brush in clean new motor oil, (3-in-1 oil, and sewing machine oils will NOT do.) Yes, detergent oils are fine, and any weight will fit the bill. OILING of the brush helps to preserve the strength, memory and spring of the hairs extending the usable life of the brush. The oiled brushes should be neatly stacked laying flat in a covered tray or pan that is longer than the longest brush hairs. Hairs must not be allowed to "set" bent" as this will impart a permanent arc in the tracking of the brush. Never store (oiled) brushes standing upright.

Water color, Water based and Acrylic water base brushes are just the opposite.

Water color brushes should be washed in mild detergent and water to remove all traces of paint. Not just rinsing under the water stream in the sink will not do. A small amount of dishwashing liquid will usually do the trick and be followed by plenty of clean warm water. Once clear of paint and bubbles, spin the handle back and forth a few times between the palms of the hands, this will air dry the individual hairs and flay (splay) them out for inspection. If satisfied with the cleaning, moisten the thumb and forefinger with clean water to reshape to the proper profile. Water base brushes should be stored DRY and standing upright or suspended upside down in an artists coil spring brush holder. If water color brushes must be stored laying flat, roll each brush in a paper sheath or towel to protect the dry brittle bristles. Another warning: NEVER bend or flex the dry hair or bristles of any brush.

The next time you visit any of the museums, pay close attention to the details on the exhibit models. What you will be looking at is most likely hand painted. You can do the same on your models. With practice and effort you will be able to have hand brushed painted detail that can not be distinguished from the sprayed painted finishes. Practice is the KEY.

keep um flyin well stroked.

John