Marker rendering of products

Peter Shipley: Middlesex University ...........................................

The line drawings in this practice marker rendering set started off in life as exercises in drawing lessons, and were therefore produced by either myself or by students working with me. They would hope, as I do, that you enjoy practising marker rendering using our drawings and manage to build personal skills that boost your confidence and give you the means to develop and communicate your own designs.

Why practise marker rendering using these templates? Some people can readily apply their knowledge of rendering to their own design drawings; these people are the ‘naturals’ - show them a graphic technique and they will use it. However most people need to build their knowledge of the processes involved by practising techniques. If they try to render a drawing that is badly executed or disproportionate then they will be dissatisfied with the result. If they have spent a great deal of time developing a suitable line drawing of a product then they are not likely to be enthusiastic about practising marker rendering on it, unless of course it is possible to work on photocopies of the original. Producing one’s own line drawings is just too slow a process when one is learning techniques.

The enclosed line drawings have been used many times by both school and university students. They always photocopy the original and are therefore able to work stress free, secure in the knowledge that if it doesn’t work then they can ‘bin’ the copy and start again with another. The knowledge accumulated from guided practice has eventually been applied to their own design work, often transforming their design portfolios.

The drawings are mainly of manufactured products. Most of them are very familiar and except in a few cases are two dimensional elevations derived from technical drawings in orthographic projection. There are some three dimensional views of existing familiar objects and a few drawings of non existent but simple shell forms.

It is not very helpful to work from solid artifacts because marker rendered product illustrations are not based upon actual observation but rather a set of general rules about what may be seen when a coloured form is placed within an environment where light is projected upon it in a very directional way.

The first decisions facing the illustrator are: what is the colour and surface finish of the artifact and which side of the artifact will face the light source?

I usually start by drawing an arrow pointing towards the side of the artifact which will be washed in light, and I note which surfaces will be facing the light source and which will be in contrasting deep shade. Perhaps the more difficult process is assigning values of light and shade to the intermediate surface details which are neither facing towards the light or directly away from it. Most of the time one can adequately describe the nature of
form by using only three shades of colour - light, medium and dark. However, careful renderings may feature many gradients of colour between lightest and darkest. The illustrator therefore needs to ask the question ‘what is the purpose of the drawing?’ Is it a simple concept sketch, or will it be a product illustration requiring much time and effort, and be probably mounted.

The process is generally much simpler when one is faced with a two dimensional elevation such as the electric drill, glue gun or disc grinder. Here the challenge is to apply colour so that the two dimensional original drawing has solidity and the flat shape appears to be a three dimensional form. It is a good idea not to progress to isometric or perspective 3D views until some success with rendering 2D elevations has been enjoyed.

I can’t give step by step instructions for the completion of the illustrations without use of expensive printing processes, although I would have liked to for a small selection of drawings - just to get everyone going and hopefully experiencing success. However, I hope some of the sequenced illustrations on the cover will be of some help. Why not produce your own visual aids showing the stage by stage rendering of a couple of products? It is worth the effort and you will get considerable future use out of it.

There follows a list of essential factors of marker rendering knowledge, but not in any particular order, read them first and try out the techniques described before launching into the drawings.

The media: materials & tools

**markers** - should preferably contain alcohol based ink. Water based markers are often of a poor quality (soft points) and the very slow drying time of their ink prevents one from building up tonal variations by over layering areas using the same pen. Because of the necessity to allow ink to dry between layers the ‘free’ quality provided by rapid action is lost. Drawings become overworked and dull, paper surfaces become rippled through over wetting. The original spirit markers are no longer sold in Britain due to medical problems attributed to the solvent base of the inks.

Before buying a particular brand of alcohol markers, find out whether ink refills are available, and how much they cost. Buying pens that are not refillable would be a costly mistake. As a price guide a good quality single ended marker would cost about £1.50 and a 25cc refill bottle of exactly matching ink is £3.00 and should refill a dry marker at least 6 times.

Alcohol markers dry up very fast if the cap in not replaced immediately after use, the points are also usually replaceable but in practice are very long lasting. They are available in different shapes but I prefer conventional flat angled tips to rounded bullet tips. This is because a wedge shape allows one to make thin and thick marks according to how the pen is held. A twin ended pen gives you the best range of possibilities but of course costs considerably more.
What colours should I buy?
The basic minimum is a range of cool greys (no3, no5, no8) black, strong red, bright blue, pale blue, emerald green, dark green, orange, rich yellow, sand. This is sufficient to produce quality presentation illustrations from each of the enclosed line drawings. I supplement my range of basic colours but always use the same brand to prevent reactions between different solvents. They are not all the same!!

I also extend my range of point sizes by making one off broad markers. I cut a piece foam core or hardboard to the width of the desired marker then wrap a layer of cotton wool over the end. I then cover the cotton wool with a small piece of surgical lint fabric (chemists) pull everything tight, then fasten down the ends by wrapping masking tape or plastic insulating tape around the point where the fabric reaches up the board handle.

Once you have filled up the cotton pad with marker ink from your refill bottles, then you must use it immediately as the ink will evaporate rapidly. These markers are great for filling in large areas and particularly to produce rich zig-zagged textures for use as backgrounds beneath cut out marker rendered products.

using pastels
The main supporting material to markers are artist’s pastels, not oil pastels but dry chalky pastels. These are available from scholastic quality at less than £2.00 for a box of 10 assorted colour sticks, to professional quality sold in mixed boxes of various size or as individual sticks at about 60 pence each.

Scrape pastel dust off the stick using a craft knife collecting the residue on a piece of paper, pick up the residue on a cotton wool ball and rub it onto the paper. The resulting subtle wash of colour is fine and seamless and reminiscent of the effects of an air-brush.

This is probably the most effortless and fool proof method of applying flat colour to a shape. Defined areas such as the face of an object washed in light may be coloured instantly in this way. Where edges are exceeded the surplus may be efficiently removed with an eraser. Highlights can be created using the same method. When highlighting edges use the eraser with a clear plastic ruler to produce crisp straight highlights. I often use powdered chalky pastels for upward light facing surfaces and close matching marker for ends sides and detail portions of the drawing. Once highlighted pastel areas are best stabilised with a fixative spray (hair spray may be used as an alternative). This prevents smudging.
**Highlights**
To highlight marker rendered drawings you need a quality white coloured pencil such as a Karisma (made by berol). Cheap coloured pencils are worse than useless, for they deposit no colour and leave a waxy sheen. Recently there have been a number of new products: worth considering are the white rollerball ink pens by companies such as Pentel. Pens like this need to be used with discretion, and unlike a coloured pencil they leave white lines which are very opaque and seem to be on a separate layer from the rest of the rendering and may look unreal.

**Paper**
Photocopier paper has a hard relatively low absorbent surface making it ideal for use in marker rendering, furthermore it is cheap and readily available. Photocopier toner is used to print the lines on copies of the marker rendering set. Marker ink has no effect on this toner, lines stay in place, and toner does not corrupt the coloured ink applied to the surface of the drawing.

**Procedures - getting started**
Chose a line drawing of an object that you are familiar with, preferably one that is a 2D elevation. Decide which direction the light will come from and work out which faces are in strong, intermediate and low light directions and prepare to use correspondingly light, medium and heavy applications of colour.
Try to apply the colour using the broad point of the pen, put the colour on by sweeping the pen from side to side in a relaxed but very controlled manner. Never fill in faces by working both horizontally and vertically or even diagonally, be consistent in your direction of marking. Don’t worry about working up to an edge, its great if you can do it, but if not go over the edge, as you would normally cut out the finished product you leave your mistakes behind.

The most important characteristics of the marker is that the ink is transparent and it is ultra fast drying. Successive layers of the same coloured ink therefore create denser shades of the colour, this is used to create depth in an illustration, building up an illusion that the object is three dimensional. Shadows are thrown by projecting features but the edge of the same feature facing the light source could be highlighted with a sparkle of light reflected or simply have a better illuminated edge.

Whole objects may cast a drop shadow, when using this feature observe how objects cast shadows onto the surface they are standing on. Plot the dropped shadow for your product based on what you have seen! Beware of overworking your drawing, this is the most common fault in marker rendering, know when to stop, try to create a visual impact with the least amount of marks. I hope some of the illustrations accompanying this pack will provide you with some directions to work towards.
Every visual starts with an accurate drawing of the product. It may be three dimensional, normally perspective, axonometric, isometric or a two dimensional orthographic view, as in the case of the power drill shown. The body of the drill is then loosely streaked with a marker.

The chuck is rendered to give the appearance of polished metal. This is done using black and grey markers and a blue coloured pencil. A black marker is used to define very clearly the surface detail, such as the trigger and screws which hold the mouldings together.

The surface relief is shown using either a darker marker or by several applications of the same marker. The detail is reinforced especially in the recessed surface features.

A white coloured pencil, pastel or white paint is used to show the highlights – where light catches an edge or the surface of a spherical or curved object. Finally, the drawing is cut out using a scalpel and remounted.