This is probably the most important section in my book, Please take the time to read it carefully because once you are familiar with the Watercolour Clock you will never again wonder how to leave a particular brush mark or achieve that special effect, You will always find the answer somewhere on its face!

When I began to teach watercolour I found myself having to put into words concepts that up until then had been purely instinctive. I looked at numerous instruction books on watercolour techniques only to find complicated diagrams, charts and statistics, and most were incomprehensible. They simply contained many tricks using everything but brushes.
I decided that I had to come up with a simple and easy to understand "driving manual" for watercolour painting.

This elusive, all encompassing diagram finally took shape after many years of refining. Because of its circular shape and dependence on timing
I decided to call it the Watercolour Clock. It has been an invaluable teaching aid because it covers just about every possible watercolour technique using brush on paper.
It is my hope that the Watercolour Clock will help you conquer what is surely the most difficult medium of all. Properly understood, the Watercolour Clock holds the key to the magical world of watercolour. Indeed, if you take the time to absorb each section of the clock, you will never again wonder how to leave a particular brush mark or achieve that special effect. You will always find the answer somewhere on its face and, eventually, you will no longer have to look!
UNDERSTANDING THE WATERCOLOR CLOCK

We can all tell the difference between wet and dry paper. However, when it comes to mixing varied consistencies of watercolor there is a tendency to mix something approximating the consistency of milk, and paint everything with it! Needless to say such a painting comes out lacking depth because everything has the same tonal value. We will now look at the physical quality of the pigment and what happens to it when we place it onto dry, damp, moist or wet paper.

Read the following pages carefully and you will soon understand the way the Watercolor Clock works.

THIS SIDE OF THE CLOCK REPRESENTS THE PAPER AND IT IS DIVIDED INTO FOUR DIFFERENT DEGREES OF WETNESS: DRY, DAMP, MOIST AND WET.

PAPER WETNESS AND EDGES

The watercolour will tell you when to paint

**DRY PAPER**
For hard edged shapes and for dry brushing. Drawing, scraping and make lines. The time to do sharp effects.

**DAMP PAPER**
For broken edges and shapes.
A good time to lift pigment and to scratch out.

**MOIST PAPER**
For soft, controlled edge shapes.
Best for misting effects, shaping and for blending.

**WET PAPER**
For soft, "lost" or uncontrolled edge shapes.
HOW TO READ THE CLOCK FACE

Suppose you want to paint a wash to suggest distant mountains. You've already painted your first, weak sky-to-horizon TEA wash on DRY paper. The perfect next step would be to apply COFFEE consistency paint onto DAMP paper. Here's how it would look on the watercolor clock:

WHICH PIGMENT IN ORDER TO GET A SPECIFIC EFFECT

THIS SIDE OF THE CLOCK REPRESENTS THE PALETTE WITH VARYING CONSISTENCIES OF WATERCOLOR MIX: TEA, COFFEE, MILK, CREAM AND BUTTER.

TEA
• This is the lightest toned wash.
• Tea washes will run freely on a tilted palette.

COFFEE
• This is the wash to use for quarter-tones.
• Runs freely, but less than tea.

MILK
• Use this consistency wash for half-tones.
• It will move slowly on tilted palette.

CREAM
• Thick pigment for three-quarter tones.
• Will move only a bit, if at all, on a tilted palette.
• Cream wash will not bead.

BUTTER
• Full tone pigment —no water.
• This will stick to the palette like glue.

NOTE: DON'T CONFUSE THE ACTUAL COLOR OF TEA, MILK OR BUTTER WITH THEIR RELATIVE CONSISTENCIES
Excerpt from Joseph Zbukvic's book, Mastering Atmosphere and Mood in Watercolor

What happens when we place pigment onto the paper? How will we get broken edges or form those beautiful soft ones? When should we lift the pigment off? How should we get granulation? How do we blend colors? It's all to do with timing! Knowing WHEN to brush the particular pigment consistency onto the paper, is the answer! This is where the watercolor clock comes in. It will tell you when to paint which pigment in order to get a specific effect.

**PAPER WETNESS AND EDGES**

Most students are aware of dry or wet paper but of course there is more to it than that. Although the drying process is continuous and it really cannot be divided into sections, in order to simplify things I have divided it into two sections. That time when it's nearly dry, which I call DAMP and the time when it's not fully wet, which I call MOIST combined with WET and DRY this gives us the four stages of wetness.

**DRY**

*Great for sharp, staccato paintings bristling with razor sharp edges.*

Obviously this stage will give you sharp edges with ability to create positive and negative shapes. Broken edges are created if you move your brush quickly across the surface. This is the easiest stage to work on because it lasts forever, so you can take your time. Don't let any mistakes dry because they cannot be disguised later.

**DAMP**

*If you can handle it this stage can provide you with wonderfully loose, impressionistic effects.*

This is a very dangerous time to paint anything, particularly if there is already a wash on the surface. It is very easy to create hard edge "explosions" and the more we try to fix it the worse they get. However if you use CREAM or BUTTER consistency paint you can create lovely lost and found edge shapes such as rocks and trees. Avoid using thinner washes at this stage because the pigment underneath is not quite dry and will lift off.

**MOIST**

*Moist paper is probably my favourite time to create those ethereal misty atmospheric effects.*

You can recognize moist paper by its sheen and by the behaviour of the pigment. Moist paper is a great time to get those soft, controlled edges for shapes in the mist or to create punchy darks with soft edges. The trouble with this stage is that it only lasts for a short time and as it dries it quickly becomes damp and dangerous. Whatever you need to paint in this manner you have to do it quickly and with the utmost economy of brushstrokes.

The moist stage is a good time to lift off pigment using a dried out brush or paper towel. This is also your window of opportunity to model the paint in the manner you would work an oil painting, to create soft passages of color and tone that melt luxuriously into each other.

**WET**

*Wet paper is best for those rainy day paintings full of glossy, translucent reflections.*

During this stage you can mix colors on the paper by letting them run into each other; you can make graduated washes; achieve granulation; create soft, lost edge shapes and generally play with washes using thinner mixtures because CREAM and BUTTER washes will not bead or run.

You can tilt the paper at different angles to make the pigment run in different directions.

This is not a good time to create any controlled edge shapes and it is very difficult to achieve a feeling of anything solid.

However, this is a watercolour at its best – fluid, glossy and beautiful. You can explore the most amazing affects.

Unless you add some structure after it has dried, it can look “cheap”.
PIGMENT CONSISTENCY This is the physical quality of the paint, not its color.

TEA
Weak transparent colors are suitable for those gentle misty paintings.
Think of a nice weak cup of English breakfast tea. No milk or cream. This is your weakest wash. If you lift your palette and tilt it from side to side, it will freely run and form a puddle in the corner of your palette. It will bead readily and spread easily.
Great for luminous skies and other light areas in your painting. Perfect for soft wispy clouds or barely discernible shapes in the mist. It is rarely used to paint individual shapes unless they are surrounded by a darker value to define them. Because it's very weak it will dry much lighter in value than it appears on the palette. You cannot dry brush with it because it will hardly leave a mark.

COFFEE
Strong translucent colors are ideal for bright and happy paintings that are full of light.
A good strong coffee has much more substance, as we learn every time we spill some. A wash of such consistency will leave behind quite a tone. If you do the tilt test with your palette, this mixture will also run freely, but will leave behind a thin film of pigment and will appear much darker than the tea wash. It will not lose much in intensity when it dries.
Coffee consistency can be used for many shapes of reasonable presence. Painted on damp or moist paper you can create distant ranges, clouds, misty shapes or, for that matter, anything within your painting requiring one-quarter tone. In lighter key pictures the COFFEE consistency can be a predominant wash and when contrasted with something much darker can provide most of the atmosphere. It is strong enough to create a contrast with white paper. It is perfect for backgrounds and gentle shading. It can be dry brushed to create wispy lines.

GREAT FOR PURE color statements when creating strong, colorful images.
This is your old-fashioned full cream variety — forget this new trend of white colored water. Here we are talking about a half-tone wash that will move on the palette in a much slower manner and will leave quite a coating of pigment behind.
Shapes painted with this mixture will be relatively solid in appearance. When a MILK wash dries it will hardly lose any of its strength and can be used for most landscapes in the middle distance and foreground.
A MILK wash has to be handled carefully because it will quickly become muddy if brushed too much. It also creates a medium contrast against white paper and is probably one of the most frequently used washes. Over larger areas it will form those wonderful granulating effects and rich, yet transparent, colors. It can be dry brushed effectively.

CREAM
Fantastic for the strongest color notes in powerful, rich paintings.
I am referring to a fairly runny variety, not thickened, rich cream. This mixture will move lazily on the palette, if at all. It should be sticky enough to completely cover the surface of the palette but runny enough to easily spread over the paper. Paint with this mix as you would with thin oil paint or gouache, because this mixture is too thick to bead.
Cream mixes are generally reserved for large dark areas such as shadows, dark trees, rocks, dry branches and anything else of substance. Great for broken edges and foreground shapes. Still not strong enough for the darkest darks but will make light areas appear lighter and create great contrast with white paper. Cream is the best mix for dry brushing.

BUTTER
Not for the faint hearted!
Australian artists will know what I mean when I compare this mixture with the beef extract spread, "Vegemite", which is thick and sticky, like shoe polish. You cannot go any stronger or richer with your pigment than this! Quite simply, this is pure pigment with hardly any added water, virtually straight from the tube. It will stick to the palette like honey and should not move even if the palette is vertical. It makes the transparent washes appear more so and adds strength to a gentle medium. It serves as a foil to large areas of weak washes and can provide tremendous contrast when placed against lightest areas. Don't dry brush it too much. It must also be used sparingly and directly or it will look dirty. Butter consistency pigment is good for solid color in small doses, such as stop-lights and small figures. It should be reserved for the very darkest darks when finishing your painting with those last magic touches.
HOW TO MAKE YOUR WATERCOLOR CLOCK TICK

All you have to do is pick up the correct pigment consistency with the appropriate brush and place it in the right place at the right time! Simple isn't it? However, two incredibly important elements are missing!
1. HOW to pick up the pigment.
2. HOW to brush it on.

BRUSHES FORM THE ARMS OF THE CLOCK BECAUSE THEY TRANSFER PIGMENT ONTO THE PAPER AT A GIVEN TIME.

Study these pages for the answers.

USE BIG BRUSHES FOR BIG SHAPES AND SMALL BRUSHES FOR SMALL SHAPES

Don't struggle trying to use a brush that's "almost big enough". Instead, use a brush that's "almost too big". This is particularly true when you are applying major washes—you must use a decent size brush to be able to build up the bead of paint to take the wash down the paper.
The opposite is true for small shapes. If you need just a small amount of pigment, for dry brushing or whatever, pick up the pigment with a small brush.
Always use an appropriate brush for the size of the object you are painting and hold your brush correctly. That means holding it well back up the handle. Never hold your brush near the hairs except when you are getting into the tiny details and even then there should be a good inch left between your fingertips and the follicles.
APPLY PAINT QUICKLY

How we apply the mixture onto the paper is like handwriting and is just as individual. You must apply paint quickly! The quicker the better! Never dab, always stroke. Your brush should dance swiftly and elegantly across the paper just as if you were an expert ice skater.

The bead can be compared to a necklace of large teardrops — It allows the paint mix to flow on the paper. If you do not paint with the bead you will end up with dry, dead looking watercolors. The bead is responsible for granulation, for gradual change of tone or color and large, flat, translucent areas in your painting.

It is imperative to work with your paper on an angle of approximately 35 degrees. Never change the angle while you work!. The angle of the board makes the paint run towards the bottom of the picture.

So there it is! Practice some washes with TEA, COFFEE and MILK, and leave some powerful marks with your CREAM and BUTTER. See what happens when you apply any of these mixtures at different times of wetness. You will acquire a range of brush marks which will become a visual language for your storytelling. You will never get to tell the story properly while you are struggling with the language.