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***** The majority of the information in this booklet has been drawn from these references.

EGG TEMPERA

Egg tempera is pigment mixed with an egg yolk as a binder. It is applied to a dry surface and is thus called *fresco secco*, as opposed to *buon fresco* which is a pigment mixed only with water, no binder, and applied to wet plaster.

The oldest date that we know tempera was used, is from 35 000 years ago. It was applied in the cave paintings that were found in Chauvet, France. It was also the painting of choice during the oldest civilizations from the Egyptian tomb paintings right up until the Renaissance. It was in Northern Europe, during the Renaissance, that oil paint slowly took over. First oil was mixed with the egg tempera, but eventually the egg was dispensed with. The advantages and disadvantages of these two media vary. It is important to take this into consideration when one is deciding on what type of appearance one wishes the painting to achieve.

—Susan Striepe, 2012

EGG TEMPERA

Pros	Cons
Durable: same color intensity indefinitely for years, e.g. cave paintings. Not so with oils. Oils become more transparent, change color, and migrate (fugitive qualities)	Size: 6-8' largest dimension Needs a rigid support
Paint is rigid when dry	Concept must be clearly formulated
Cool tonality: incomparable tonality	Not adapted to warm tonality
Dries quickly	Have to work section to section
Color does not change over time	

EGG TEMPERA

Toxic Pigments (Egg Tempera, n.d.)	Safe Pigments (don't breathe the dust)
Flake white	Ultramarine blue
Lead white	Ultramarine blue light
Manganese blue	Venetian red
Naples yellow	Yellow ocher
Raw umber	Zinc white
Viridian green	

EGG TEMPERA

Toxic Pigments	Safe Pigments (don't breathe the dust)
Burnt umber	Burnt sienna
Cadmium red vermillion	Ivory black
Cadmium yellow deep	Mars black
Cerulean blue	Raw sienna
Chromium of oxide green	Red ocher
Cobalt blue	Terre verte
Cobalt green	Titanium white

EGG TEMPERA

Pros	Cons
More pattern-like: abstract system of light and shade	Does not have perfectly smooth transitions from one color to another (hatching utilized as compensation)
Linear and jewel-like	No extremes in comparison to oil: light/dark, warm/cool, transparent/opaque
Pigments dry to a truer pigment color	
Saturation is medium-high Light, fresh, blond	Not well adapted to low key painting: painting dark on dark appears muddy and obscured

EGG TEMPERA

How does this translate into matching this media to a specific style?

- Tempera is suited best to clearly defined shapes and tones.
- Tempera allows detailed and elaborate compositions, make sure your subject matter is defined and deliberate.
- Transitions are abrupt. They can be softened with hatching or cross hatching. The style is more akin to drawing than painting.
- Layers of thin glazes must be applied to build dimensionality.
- Work from the background to the foreground.
- The lighter the color, then the more opaque the paint will be.

TECHNIQUE

- 11) Deposit paint evenly and with clean edges.
- 12) Skin tones are best done last.
- 13) Use parchment paper as a palette.



TECHNIQUE

- 3) Work from background to foreground.
- 4) Paint values must be blended with overlays of linear strokes: either hatching or broad strokes.
- 5) Opalescence is achieved by applying a lighter value over a darker value of the same hue.
- 6) To create a sense of depth, warm colors can be glazed over cool colors or vice versa.
- 7) To create translucency glaze a dark color over a lighter color.
- 8) Opacity created by overlaying the same tone repeatedly.
- 9) Load brush (long hair brushes are recommended) onto a sable hair and partially wipe it off to avoid paint blobs. Paint should be thin enough that the brush should not have to be pushed or dragged.
- 10) Confine technique to single brushstrokes. The medium relies on the quality of single strokes. It is akin to drawing.

TECHNIQUE

A. Support (must be absorbent)

Poplar or birch plywood; sand untempered masonite and then spray and wipe with alcohol (windex); acid free heavy weight paper, only acceptable if the work is small; watercolor board does not need size or gesso applied to it.

B. Size

- 1) Size all painting surfaces, before laying on the ground.
- 2) Mix **1glue:16 water**; that is two cups of water and 1/8 cup rabbit skin glue (gelatin is an alternative choice, but it is more brittle and can yellow). Let it stand overnight. All glue granules must be completely dissolved before it is ready to use.
- 3) Heat in a double boiler until tepid and has a low viscosity (runny, and water-like) and use immediately. Do not let the glue boil or come into direct contact with the heat source.

TECHNIQUE

3) Apply with brush quickly and evenly. An optional layer of linen may be applied, but another layer of size needs to be applied over it before the gesso is layered on top. Let the panel dry overnight. Thompson (1962) suggests sizing it a second time, but add 2 tablespoons of whiting to the mixture and then let it stand overnight again. Alternately, Smith (1987) recommends applying two coats of glue size at right angles to one other.

Puttying is a way of covering up imperfections, nail holes, moldings etc. Mix whiting and glue size to the consistency of putty. Thompson suggests, "...put a spoonful of whiting into the palm of your hand and add size to it and working it about to make a soft and rather sticky paste. Roll it up into a little ball, and as it cools it will set... With a knife or spatula work this putty generously into nail holes, scratches or other places which need puttying.

TECHNIQUE

F. **Pigment** (must be freshly mixed for each session)

- 1) Roll egg yolk on a towel to absorb the excess albumen
- 2) Pierce yolk with a pin
- 3) Squeeze yolk out of yolk sac and mix with 1 tsp distilled water
- 4) Add distilled water to dry pigment until a creamy paste forms
- 5) Generally, add an equal amount of yolk mixture and pigment mixture.

G. **Paint Application**

- 1) Apply paint to underdrawing in thin layers. Suggestions: ink, chalk, casein paint.
- 2) Darker underpainting is blocked in first. Separate into dark, medium, and light tones.

TECHNIQUE

D. Underdrawing

Use tracing paper or draw directly on the surface. Underdrawing is important in tempera as it is such a precise and unforgiving medium. Don't use graphite, it shows through the paint. Use a chalky medium, e.g. conté, charcoal, or chalk pastels, to transfer the drawing onto the support.

E. Adding Values

To add values to the underdrawing prepare a range of different values from light to dark. They can be created by adding one drop of ink into a mixing utensil, adding two drops in another, and so forth, each time adding more drops into a new receptacle. Into each container, add ½ teaspoon of water. The ink values should correspond with the values in the drawing and the intended values in the final painting. Alternatively, draw with chalk (conté, chalk pastels etc.) and vary tones by swiping with a wet cloth.

TECHNIQUE

Do not try to leave the surface quite smooth. It shrinks a little in drying, and so should be a little convex when it is first put on. Let it dry for at least 2 hours; then scrape it smooth with a knife.” (Thompson, 1962, p. 24-25)

C. Ground

Acrylic gesso is not compatible with egg tempera. An egg tempera gesso mixture uses precipitated **whiting** (e.g. chalk, gypsum, marble dust = calcium carbonate from sedimentary rock) and **titanium white** in a **9:1** ratio, as well as the rabbit skin **glue** and water.

1) **16 oz. water : 1 oz. glue : 24 oz. whiting** (9:1=calcium carbonate : titanium white). My approximation is three cups of chalk to three heaped tablespoons of titanium dioxide.

TECHNIQUE

- 2) Add the glue to the water and allow to stand overnight or until the glue granules are completely dissolved (same procedure as with the sizing).
- 3) Heat the glue mixture slowly in a double boiler until tepid —don't exceed 135 degrees fahrenheit (Egg Tempera, n.d.). Do not let the glue boil or come into contact with the heat source.
- 4) Add teaspoon-sized amounts of sifted whiting onto the warm glue mixture. Stir very carefully so as not to introduce air bubbles into the mixture and then let the mixture stand for up to an hour or overnight. Cover with glad wrap to prevent a skin forming. The gesso will have to be reheated and applied whilst warm.
- 5) The gesso should have a cream-like texture. The warm gesso should be applied to the front , back, and sides of the panel. Wait until each coat has a slight sheen before applying the next coat. Apply four coats.
- 6) Apply the first coat thinly using your fingers and a smooth, circular motion eliminating any bubbles. Use a bristle brush to apply

TECHNIQUE

- the successive coats. Allow each layer to be touch-dry between each coat. This process should be conducted in one session.
- 7) Let the panel to dry for 24 hours.
 - 8) Once dry, the panel can be sanded to a smooth finish. Graduate from 120–320 grit (Egg Tempera, n.d.).

