

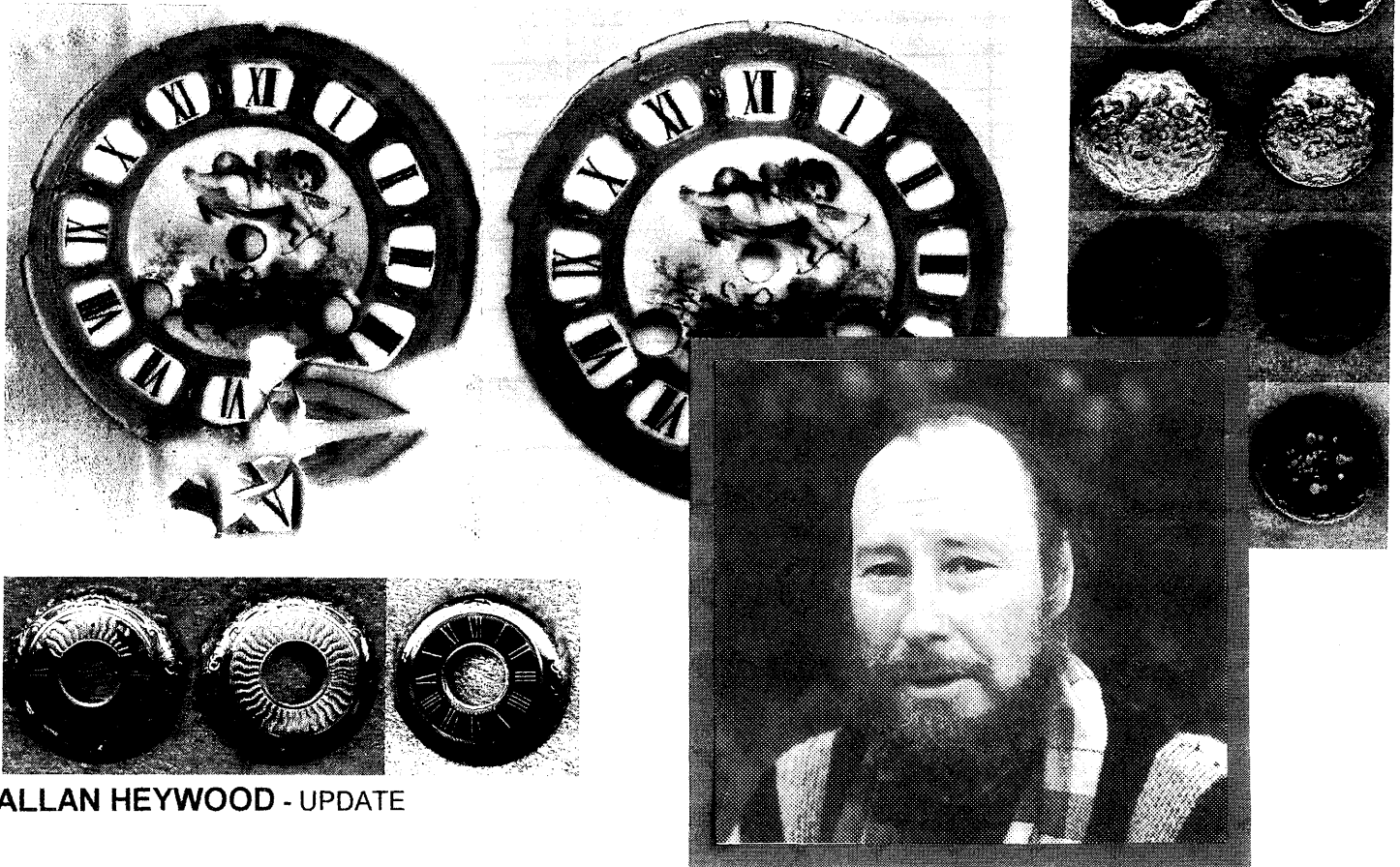
Australian Enamel Newsletter

Issue 63 - August 2000

ALLAN HEYWOOD ENAMELS

DESIGN - RESTORATION - REPAIR

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ALLAN HEYWOOD - UPDATE

The focus of my enamelling interest over the last five or six years has been on the repair and restoration of all sorts of enamelled items. Most has been jewellery, although I did get my hands on an exquisite black-ground cloisonné vase which, though unsigned, was almost certainly by Namikawa Yasuyuki.

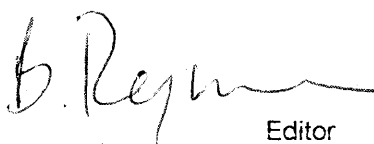
I'm finding too that an increasing proportion of the work I get to fix is antique watches and clock faces, bezels, cases and decorative panels. A variety of karat and non-karat golds, as well as various sterling-like silver alloys were used in case construction; elaborate, often diamond set cases are great exercises in deductive logic and the prospect of them ending their hitherto long lives as pathetic heaps of metallic slag on the kiln floor really gets the juices flowing.

Where it's necessary to replace numerals and minute rings on watch or clock faces or the external chapters of Hunter-style pocket watches, I initially hand-drew 10x masters in india ink which were scaled down for photolithographic reproduction in ceramic inks. For the last six months or so I've been using the excellent CAD programme Adobe Illustrator 8 to build up a library of scaleable micro-detailed numerals and rings, and have invested in the means of making my own numerals and dial bases.

I've also been working towards making one-off reproduction antique watch and clock faces in vitreous enamel from scratch, and having managed to sort out most of the technical problems, should be supplying the market by the end of the year.

I get to make a few pieces of interesting (as opposed to production) jewellery and one or two commissioned panels each year, and I'm currently working on a couple of very finely detailed photoetched pieces which should be finished for the coming Indian exhibition.

Winter always drags on in its last month. Happily there are some hints of spring and I for one am looking forward to shedding some of my layers of clothes.


Editor

NEWS

☞ Julie Purdy (NZ), Carolyn Delzoppo and Barbara Ryman had work in the "Enamels...Out of the Fire" Exhibition in San Diego, California.

☞ Tibor and Camilla Szakos now have new enamel work on display at Gannon House Gallery in the Rocks, Sydney.

WANTED TO BUY

Beat Urfer would like to buy any unwanted stocks of the old Thompson lead bearing opaque enamels. He is mostly interested in the following colours:

Middy Blue, Hyazinth, Concord, Marygold, Mauve, Delft, Bluejay, Dark Brick, Sky, Bittergreen, Myrtle, Periwinkle, Clover, Mist, Geneva., Arcadia, Wedgewood, Civette, Evergreen, Chrome, Petal, Cactus, Olive as well as Opal: Beige and Transparent: Mikado

He would be happy to purchase any of the above or any other colours in any quantity in 80 mesh powder or lump form.

P.O. Box 336 Herberton, 4872 Queensland
Tel/Fax 07 4097 8141

FOR SALE

E2 Ward Kiln, 240 volts, Internal measurements 12" x 12" x 4", single phase power. Has a pyrometer and energy regulator and is in a pretty clean condition. \$500. Call Mrs June Higgs on 02 9416 4484.

THANK YOU

Allan Heywood, Debbie Sheezel

☞ **The deadline for material** for the next issue is Sept 23rd, 2000. All articles, comments and news are welcome. Send to Barbara Ryman, 71 George St, Thirroul 2515 NSW.

Ph/Fax 02 4267 2939
Email: bryman@ozemail.com.au

AROUND THE MAGAZINES

ORNAMENT Summer 2000

-'Post Modern Alchemy'; Nail Necklace (enamel, copper and cord) by Susan Kingsley

Metal Stone & Glass

-Making "A nude in silver cloisonné on Fine Silver" by Sandra Kerr

craft arts no.49

-The 10th Biennial JMGA Conference by Liz Shaw

-Arts Education and Funding; the perspective of the New Zealand Government by Rt Hon. Helen Clark PM (and Minister for the Arts, Culture and Heritage)

OPPORTUNITIES TO EXHIBIT

The 14th CLOISONNÉ JEWELRY CONTEST: The Japan Shippo Conference Juried Exhibition at the Ginza La Pola Gallery, Tokyo and the Syosenkyo Rope-way Shippo Museum, Yamanashi.

Eligibility and Format

Enamel works, not only cloisonné, for all types of accessories completed since 1998. The juried show will be exhibited in two galleries mentioned above.

Entry

Each artist can entry up to 5 entries without entry fee.

Calendar

October 21, 2000 - Entry works must arrive to the organizer. Deadline final

November 6, 2000 Jurying - Notice of acceptance/rejection.

January 23, 2001 Opening Reception - 6:00 p.m. at Ginza La Pola Gallery. Any entries received after October 21 will be returned unopened.

(Send SAE to AEN for a copy of entry form.)

A Visit to Glass Metal Industries - by Debbie Sheezel

I recently had a delightful and interesting guest staying with me. Her name is Pat Johnson and she is an enamellist in the large scale. She has spent many years working in the field of vitreous enamel on steel which is quite different from jewellery enamels, though she does this with bowls also.

She was coming down South to the bitter cold to visit an enamel factory she had heard about while in England and she wanted to check it out first hand so I took her out to Geelong, (Moolap is the suburb) where they are located.

It was very interesting. Adam, a family member running the business showed us around from the

huge acid baths, the spray booths, to the very huge kiln, in which the panels are suspended and drawn along on a moving system through the kiln which is gas fired. They produce street signs and other signs for cities requiring enamelled signs, barbecues, heaters, baths, panels for machines etc. etc. I saw a gentleman sitting quietly and carefully hand making a car number plate in the old way. He had a very steady hand!

Adam told us that a few artists have done large scale steel panels there, Arthur Boyd being one of the artists, and providing there is not a large order being produced at the time, they don't mind artists working there for a short while. There is a possibility for architects to use panels incorporated in their building designs as in the foyer of the Hospital in Newcastle and at Melbourne University in the Engineering Department.

All in all it was an interesting visit and a really nice drive with Pat through the countryside.

(The company has an excellent website - <http://www.glassmetal.com.au/Comp.html>
Really worth a look - Ed)

TECHNICAL DIALOGUE

Reported by Doris Ratz

(Reprinted with permission of Enamel Guild/North East)

This lively discussion, with Marilyn Druin as moderator, focused on the technical aspects of the challenging art of enameling. It commenced with an observation about a mid-west enamelist who put an enamel piece into the kiln and forgot about it for several hours, (is there an enamelist alive who has not done this to some degree?). When she eventually remembered and removed the piece she was quite surprised at the result. True, it was slumped, and hardly resembled the pre-fired piece, but the colors were good and the piece was needed for a show the next day. The enamelist mounted the piece, and it was sold at the show! I guess disasters are sometimes blessings! Valeri Timofeev also had a similar experience of leaving a fine silver plique-a jour cup and a gold plique-a jour cup in the controlled temperature annealing kiln for no less than 14 hours! These examples were passed around and attendees noticed that the gold cup showed little effects of the prolonged stay in the kiln. Valeri observed that the colors were clearer. The silver cup showed some minor color changes, which Valeri said was due to silver leaching into the enamel. To my observation, both cups were exquisite, and these two illustrations show the need for us to be aware when firing, and also to look for hidden blessings when awareness is lost! The value of electronic kiln controllers was noted.

Electronic Kiln controllers

These automatic controllers will keep a kiln at a pre-set temperature. The consensus was that they worked well and were worth the money. Enamelists still need to observe the color in the kiln, and may need the controller to be properly adjusted. OMRON was noted as one company who manufactured controllers to industrial standards, and a controller is available through the Thompson catalog at a moderate charge.

Red for Silver

A Japanese transparent, 105B, is good on silver, SL28 is a good pink on silver.

Using Enameling Kilns for Other Uses

Several attendees stated that this should not be done. Burnout, PMC, etc. can leave some residue which will affect the clarity of enamel colors. An enameling kiln should be used for enameling only. Do not accept a used kiln if former use is not known.

Enameling on Sterling Silver

A good sterling silver casting can be fired up to 3 times. More than this can cause discoloration and pitting problems due to porosity even if a fine silver skin is brought to the surface with heating and pickling. This can be reduced by heating and pickling in nitric acid several times, then use a brass brush with soapy water in one direction only. This reduces porosity, which reduces discoloration of enamel. It was suggested that fine silver be used to avoid these problems.

Uses of Liquid Enamel

Liquid enamels can be useful for vertical surfaces, noilow forms, enameling two sides at once (reduces warpage), and as a design element for a painterly approach. It can be brushed, poured, trailed, applied with a sponge, etc. Liquid enamels fired high can turn gold, green, blue, etc. You can sgraffito through thin dry liquid. White diluted and applied over black will give a range of Drays. Experimentation is the best way to discover more uses for liquids. For greatest clarity, however, it was suggested grade sifted dry transparent colors be used.

Uses of Acrylic Enamels

John Kilmaster and Bill Helwig use acrylic enamels with effectiveness. Acrylic enamels are finely ground enamels in an acrylic medium, which fires without residue. This material was not widely used by attendees.

Matte Surface

A matte enamel surface can be achieved by stoning, sandblasting, using Armour-etch, and Etch-all, Twink rust remover, 3M products (Alan Kravitz will be researching these), and underfiring. Armour-etch is a paste and takes about 5 minutes to matte most enamel surfaces. Etch-all is a liquid and much stronger - use with caution and wear gloves for both.

Attaching Enamel Wall Piece to a Backing

GE Silicone 11, E 600, Goop, - all obtainable from hardware stores. Drilling holes in metal before enameling and using screws to attach to backing was suggested as the most reliable method. Screws can easily be disguised.

ENAMELLING COMMON SILVER AND GOLD ALLOYS by Allan Heywood.

(Reprinted with the permission of Allan Heywood)

Sterling silver is an alloy of 925 parts of pure silver with 75 parts of pure copper - this relatively small (7.5%) addition of copper gives silver, which is very soft and malleable in the pure or 'fine' state, a hardness & rigidity which allows it to resist wear and deformation in functional items such as hollow-ware and jewellery. Sterling silver is an excellent casting alloy and is used herein as a model - the general principles articulated in these pages apply to all of those gold and silver alloys which are capable of being vitreous enamelled. The casting process is not covered here - that information is readily available from standard reference works such as Oppi Untracht's JEWELLERY - Concepts & Technology, ISBN: 0-385-04185-3. It's also assumed that the reader has a working knowledge of enamelling.

Successful enamelling of sterling silver castings depends on a number of variables - many, as responsibilities of the caster, are beyond your direct control - important among these are porosity, crystal size and orientation, and metal purity. To minimise their effects use new, unadulterated metal (no sprues or other offcuts) smelted at the right temperature in an uncontaminated crucible.

A simple process known as 'Depletion Enrichment' is used to prepare sterling silver and similar alloy surfaces which are to directly receive enamel. Regardless of whether they have been cast, stamped, rolled or otherwise fabricated, alloys such as Sterling, unlike pure silver (and pure gold), form tenacious dark surface oxides ('firescale') during firing. The surface should be treated to remove existing firescale and reduce the effect of oxidation under the enamel.

METHOD

(1) Engrave or otherwise work any sub-enamel areas if required.

(2) DEPLETION ENRICHMENT OF THE SURFACE. To produce (by oxidation of surface copper, & subsequent removal by acid digestion of those firescale oxides) a substantial layer of pure silver on the surface of the alloy, to which the first layer of enamel will be fused.

a/ **Heat** the piece to be enamelled to dull redness and allow to cool until no radiance is visible. It will probably now show the dark firescale referred to previously.

b/ Place in an appropriate **acid pickle** (10% nitric or sulphuric acid, Sparex No 2, or vinegar and common salt) in a covered heat-and-acid-proof container and allow the piece to digest until all of the firescale has

been dissolved. **The work should appear dull & white** (or yellow in the case of gold alloys).

c/ **Remove** the work from the acid using acid-proof tongs, **rinse** under running water, wash with water and detergent then **clean** with a glass brush or equivalent (eg. domestic fibreglass insulation, used with rubber gloves) under running water. Rinse again and **dry**. (Burnishing at this stage increases the surface density of the casting and can be used in a pinch to minimise porosity).

c/ **Repeat** these operations until no further oxidation of the surface occurs in the annealing stage (generally 2 to 4 times). Scrub with cloudy ammonia or dilute sodium bicarbonate solution to neutralise any residual acid, rinse under running water and dry.

Depletion enrichment is critical to maximising the clarity and brilliance of transparent enamels on sterling silver and similar alloys.

It is not generally possible to salvage a piece with deteriorated enamel caused by inadequate enrichment, other than by grinding off all the enamel and starting the process again from scratch, or, dissolving the enamel by some chemical process - (various literature suggests the use of Hydrofluoric acid - a dangerous suggestion, unless the individual is familiar with the use of HF, and has ready access to the appropriate facilities and equipment necessary for the safe handling of this particularly reactive, hazardous reagent).

(3) **Don't overheat the casting** - either during enrichment or when firing the enamel - although the solidus point (melting-point is the equivalent in a pure metal) of sterling silver is 893 deg C its degradation point, (the temperature at which the alloy begins to deteriorate) is about 770 deg C. **Many gold alloys have melting points too low to allow vitreous enamelling.**

To provide a safety margin, select enamels with maturation points in the range 700 deg C to 760/770 deg C (**soft to medium**). Enamels do not have single well-defined melting points; their viscosity decreases exponentially with increases in temperature. What might be for convenience called the **maturation** temperature is reached when the enamel has been heated to redness and its viscosity is sufficiently reduced to allow the surface of the enamel to flow out and become shiny and smooth.

The maturation temperatures of most contemporary jewellery enamels fall in the range 700 degrees Celsius to 820 degrees Celsius; it is generally accepted that within that range, **enamels with maturation points in the area from 700 to 730 degrees Celsius are called 'Soft' or 'Low-firing'; in the area from 730 to 770 degrees Celsius they are called 'Medium' or 'Medium firing' and in the area**

from 770 to about 820 degrees Celsius they are called 'Hard' or 'High-firing' enamels.

Check the progress of the firing process visually - the thermocouple is measuring only the temperature of its own position in the kiln, which is not necessarily related to the actual temperature of all (or any) parts of some pieces.

VISUAL TEMPERATURE ASSESSMENT (very loose approximations!)

Dark Red .. about 700 deg C

Dull Cherry Red .. about 800 deg C

Cherry Red .. about 900 deg C

Bright Cherry Red .. don't think about it!

(4) Plan to have the piece to be enamelled undergo the minimum number of firings at the lowest practicable temperature that will ensure complete maturing of the enamels. Although the degradation point can be (and often is) exceeded by up to 50 deg C without visible deterioration in the case of 925 silver, **the alloy's grain structure alters** and any porosity or other weak points will be aggravated.

(5) Test-fire all the enamels you plan to use on scraps of enriched metal to determine their suitability. A flux (clear enamel) formulated for use on silver (all silver fluxes I've tested discolour progressively with each firing on sterling) must be used as an undercoat for reds and many other warm colours - pinks, oranges, roses, yellows etc - with very few exceptions, these colours cannot be successfully applied **directly to silver or silver alloys (and many gold alloys)** because of chemical reaction/s at the enamel/metal interface which cause the boundary layer of enamel to become 'muddy' & opaque.

FINALLY - after surface enrichment has been carried out, the procedures for enamelling the alloy/s are the same as for 999 fine silver/24k gold except that the enriched surface should not be disturbed - removal of or damage to the pure metal layer will allow firescale and firestain to again form on the un-enamelled metal during firing. It's nevertheless a simple matter to remove firescales either physically or by judicious pickling after the final firing, if the enamels used are acid-resistant or can be masked off.

' Following is an extract from Woodrow Carpenter's enlightening article about 'Metals Which are Suitable for Enamelling' which goes some way to explaining why, after we've religiously adhered to all the preceding commandments the enamel still sometimes refuses to stay on the piece.

Mr Carpenter, writing in 'Glass on Metal' confirms that engraving or otherwise working the sub-enamel areas does not (contrary to popular belief) provide the key

between the glass and the metal base; the adhesion of enamel to a metal substrate is dependant on a variety of other factors.

'THE ENAMEL, TECHNIQUE OF APPLICATION, & FIRING CONDITIONS MUST BE CAREFULLY SELECTED FOR EACH METAL, BASED ON THE FOLLOWING PROPERTIES OF THE METAL:

- 1/ MELTING OR SOLIDUS POINT.
- 2/ COEFFICIENT OF THERMAL EXPANSION.
- 3/ MODULUS OF ELASTICITY.
- 4/ OXIDATION CHARACTERISTICS.
- 5/ SOLUBILITY OF ITS OXIDE IN ENAMEL
- 6/ STRENGTH AT ENAMELLING TEMP.
- 7/ ABILITY TO ABSORB/RELEASE GASES @ ENAMELLING TEMP.
- 8/ POROSITY.

(ref. Glass on Metal Vol. 5, No 6, Dec 1986, 'METALS SUITABLE for ENAMELLING', by Woodrow Carpenter, pp 81,82 & 83; Reprinted G.O.M. Vol.11, No 1, Feb.1992).

These variables are the responsibility of the enamel formulator and are beyond the control of enamel users. The most a user can do in this area is choose what might be suitable enamels using the material specifications (when they are available!) of the formulator.

No amount of rigid observation of methodology or process, however, will remedy the problems (cracking, delamination of the enamel, excessive distortion of the metal base) that result from attempting to enamel work that has either not been designed to receive enamel or is otherwise structurally inadequate - put simply, **the enamel film should be as thin as practicable and the metal base should be as thick as possible.**

Where possible, boundary 'walls' at least 0.2mm high should surround each enamelled area **and the finished enamel thickness should ideally be no more than 1/2 the thickness of the metal base, particularly at the edges of the piece.** Notwithstanding all of the above, it is often necessary to counter-enamel a piece (generally with the enamel used on the front) to reduce stress on the face enamel.

COMPOSITE PIECES

Pieces assembled from more than one component are usually soldered together with I.T. silver solder (sometimes called Enamelling, Case or Extra-hard solder) if the joint is to be enamelled. The flow point of I.T. solder is around 810 deg C compared with around 787 deg C for an average Hard silver solder. If the joint is not to receive enamel then it may be constructed in some other way.

6.

Thus, the flow point of I.T. solder is about 40 deg. C above the degradation point of sterling silver, which according to Oppi Untracht, begins to break down about 770 deg C. **However**, with careful attention to soldering temperatures I.T. solder may be successfully used to join sterling components. Soldering and joint cleanup will need to be completed prior to depletion enrichment. Just as importantly, the piece must be supported at all critical points during firing; this will minimise stress on the soldered joints which **will** move or collapse if the temperature is too high, or the piece is inadequately supported. It is worth making a special trivet for the job from stainless steel.

Once again it is absolutely essential to select enamels with characteristics best suited to the metals used in the construction of the piece, and with the solidus point of the solder in mind.

ENAMEL PREPARATION

1/ Regardless of whether the means of application is to be by dry-dusting or wet-packing, wash the enamels as follows: to a tall glass container (such as a Fowlers fruit bottling jar) add sufficient enamel powder to fill about the bottom 1/8 of the jar.

Fill the jar to about the 3/4 mark with (preferably deionised/demineralised) water & stir vigorously until any lumps are broken down & the enamel is in suspension in the whirling water.

Allow to settle for a short time (10-30 seconds generally) & decant the still-suspended 'fines' into another glass container - these fines are sometimes kept for operations requiring very finely ground enamels, but should generally be discarded. Repeat these operations until the water above the settled enamel grains is essentially clear.

Drain off the remaining water, spoon the wet enamel onto a plate, soak up as much moisture as possible with a paper towel or cloth, & allow to dry. (On top of the kiln or in a microwave oven or muffle furnace). Store dry in a clean lidded container.

2/ If the enamel is to be used for wet-packing/inlay - particularly if it is a transparent - it is generally necessary to GRIND & rewash just prior to use as follows: Add about a tablespoon of enamel to an agate or hard porcelain mortar, just cover with clean water & grind with a moderate pressure for 30-60 seconds - swirl the contents, pour off the milky water & repeat the grinding/rinsing process until the water is clear - if possible the last couple of rinses should be with deionised or distilled water, since tap waters contain varying amounts of dissolved salts & suspended solids which could cause 'watermarks' or cloudiness in the finished enamel.

Transfer to a clean glass container & either use immediately, or dry & store for later use.

Allan Heywood, Skipton

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TECHNICAL DIALOGUE, Enamel Guild/North East cont...

Straight Lines with Cloisonne

Suggested ways to make straight lines with cloisonne were to use round wire, and to run wires off edge of piece. For the latter technique, enamel must be applied to both sides of the wire, and the wire not clipped until all firings are completed. The piece must be supported while trimming wires. A method used by Jean Tudor is to clip the wire part way and push to one side, and clip again and pushed to the other side. The clipped wires can be covered with opaques and / or foils and transparents.

Broken Ear Post with an Enamel Setting

The preferred solution to this problem was to remove the enamel from the setting and repair the post. A fusion welder such as a Sparkie may work. A third solution to this problem was to solder a new post to a patch and attach this to the ear back with epoxy.

Here are some Assorted Pearls and Gems from Mary Chuduk.

(Reprinted with permission from Enamel Guild South Newsletter, Vol XXI, No. 5, Summer 2000)

☞ You can keep your drawing sharp in 2 ways. Cover the metal with asphaltum. Sgraffito your design and etch with acid (the way print makers work). Or, to get a sharp design without using acid, draw with a Vibro-Tool (i.e. Dremmel with variable speeds). Rub black oxide into the lines (i.e. Thompson P-3). Wipe away excess. Fire and you will have a permanent sharp drawing.

☞ Try using "Pixie Dust" (like gold dust). You can purchase it where auto supplies are sold. Use like lustres.

☞ Try using "color shapers". These are soft, rubber tipped tools that come in all kinds of shapes and sizes (pointed, squared off, etc.) Good for brushing off excess enamel before the piece is fired. Better than a brush which may leave small hairs or disturb the enamel in a tiny area.

☞ If you're using leaded enamel, use cold pickle. A lot of leaded enamels are not acid resistant. Underglaze crayons are the same as ceramic pencils. For an interesting effect: scrape a little off with a sharp blade. Add a little distilled water. Paint it on a

surface that is grease-free. Good over hard fusing white.

☞With crayons, no need to roughen surface first. You can dip the crayon into water and work with it that way, or (this is better) wet the surface first.

☞With ceramic pencils, use over 1010 hard white. Best to roughen the surface first. This can be done with warm pickle or B & B EtchAll, liquid or cream.

THE WORLD OF ENAMEL *Third International Exhibition: Salou, Spain 1999* by Audrey Komrad (Reprinted with permission of Enamel Guild South Volume XXI, No. 1, October 1999)

I want to share with you my very personal experience in enameling from my trip to Barcelona in June of this year. In answer to a call for works for the exhibition in Salou, I was pleased to have three pieces accepted. My husband and I used this as an opportunity to visit Barcelona.

The exhibition itself took place in Salou, a small seaside resort town just south of Barcelona. Andreu Vilasis was fortunate enough to be able to establish a permanent museum known as The Museum of Contemporary Enamel within a 13thC defensive watch tower known as the Torre Vella which stands in about four acres of landscaped grassland on a knoll near the Mediterranean Sea. With brilliant architectural reconstruction, the tower and its adjoining building (formerly a barn) was reconstructed maintaining the external characteristics of the 13thC building and opening the interior into beautiful exhibition space on two levels and well lit. The permanent exhibition, showing examples of superior enameling from around the world, for the most part is housed in the tower itself.

The rules for this year's exhibition were: to create a self portrait, exactly 16.5 in x 11.5 in in size and without frame or support. The exhibition consisted of the widest possible range of interpretation of the term "self portrait", from true realism to the most abstract. The colors and techniques displayed by the artists represented were beautiful in all regards. Unfortunately, the lack of framing along with the large number of pieces presented, did not lend itself to easy display. The result was large banks of wooden frames that held multiple pieces and understated the individuality of the work.

Of course, we took the opportunity to visit the School of Applied Arts in Barcelona where Andreu Vilasis and Nuria Lopez-Ribalta have been teaching enamelling courses for many years as part of an overall multi-year course in applied arts. We had met Andreu previously at an enamel exhibition in Coburg, Germany. Andreu and Nuria were marvellous hosts and showed great delight in escorting us through the

enameling facility. There was a very large, well lit room which could accommodate many students with multiple kilns of various sizes, as well as a separate metalworking facility. Their stock of enamels and the way they were stored were interesting. It was noteworthy that they continue to use only leaded enamels.

We were also fortunate enough to meet with Francesc Vilasis in his penthouse studio which overlooks all of Barcelona. The studio was divided into several small rooms. The area with the brightest natural light was also used for his oil painting and we saw several paintings in progress. Those of you who are familiar with his work know that his designs often encompass other media such as oils. As expected the studio was completely equipped with many shelves of magnificent enamel colors, again, all leaded. He enthusiastically unwrapped and showed us many pieces of his latest work that he was preparing to send to his exhibition in Switzerland and we were enormously impressed with his dynamic designs and techniques.

ENAMELLING AN OSTRICH EGG by Dorothy Cockrell (Reprinted with permission of guild of Enamellers, 2000 Summer Journal)

Enamel doesn't have to go on metal, you can do it on glass, ceramics, slate and garnet, so when I was asked to enamel an ostrich egg I was less surprised than the client expected me to be.

I didn't think it possible, but she thought she had seen one done and we agreed to have a try. The first problem, of course, was that it was too big for my kiln. "Let's try a bit and see, it's cracked anyway". So she cracked off a piece, we gummed and sifted, dried very carefully and popped it in the kiln.

Sure enough, the egg shell didn't like the heat one bit. It expanded, cracked, spat the enamel and bits of shell in all directions, laid a layer of ash on the base of the kiln - and the enamel wasn't even near fusing!

I think the one she had seen was probably done with car "enamel", sprayed on, dried and polished so I suggested that shameful stuff 'cold enamel'.



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PIERCED PLIQUE-A-JOUR by Sandie Bradshaw

(Reprinted with permission of Northern California Enamel Guild)

Recently I had someone e-mail me about how to teach piercing-style plique-a-jour and which enamels worked best in this technique. The following is only my opinion and general advice from my experience about what works for me.

I let my students do plique-a-jour with piercing quite often. Also, I have just finished a fan that used a found copper-pierced set of dragonfly wings (very thin metal), and they enameled fine. I did have to back the pieces with mica as I fired; because of their lack of depth, the enamel wouldn't hold on. Other than that, I had no problem. Of course, I didn't have any exceptionally big opening, none over, say, 1 / 4 inch. So with piercing, thickness of metal is not so much of an issue.

If, however, you want to create pierced pieces using the capillary method without a back, Alana Clearlake told me that in her experience, you cannot use metal lighter than 18 gauge. I usually construct my forms from 16-gauge square wire soldered with 72/ 28 (IT) solder, as I mostly make earrings. Personally, I now only use fine silver because depletion gilding is such pain, and because sterling has such a low melting-point during the soldering that it is just too frustrating to use.

Now about colors in the Japanese enamels. Don't let your plique-a-jour pieces near that beautiful A-061. It's a gorgeous color, similar to water blue in the lead-free, but it really pulls away from the center in plique enameling and has to be very thick to work. (That sort of defeats the whole idea, doesn't it?) Water blue lead-free is just as pretty; you can't tell them apart in plique; and it behaves much better. I would also avoid the opalescents for beginners. Soyer yellows 15 and 17 are wonderful, but I hear they are being discontinued. Japanese red for silver A-105 is really nice, although a little toward the purple side for my tastes; but if I'm using purple in the piece

what the heck. Those are pretty much all the Japanese or leaded enamels I have tried. I mostly work in lead-free enamels because I can torch around them and repair the piece, and they don't go all black from the lead. Also they are 25% lighter, and that is appreciated in an earring.

☞ **Edmund Massow** has rearranged and updated his website homepage. Give a look. <http://home.pfaffenhofen.de/em-enamel>

Jean Tudor Mini Workshop-A Review

by Sandie Bradshaw

(Reprinted with permission of Northern California Enamel Guild)

The Jean Tudor mini-workshop was a whole lot of fun. There were 16 of us with approximately 10 people enameling. Jean really attacks some of the myths of complexity. She just made it fun and not intimidating to enamel. She showed a good selection of her own pinch pots from large to small, as well as showing us some from Vlatka Varga that combined electroforming with a similar firing technique. The technique taught was using tooling foil cut by scissors to at least a 5" diameter circle either of Thompson tooling foil or roofing foil used in roof repair. She had us make overlapping bends in the 4 quadrants of the circle with long nosed pliers. You want the bends to create 2 layers of metal. Then make more bends between those bends, either by hand (which Jean prefers, as the results are more interestingly irregular) or with the pliers. Once the bowl was the shape we wanted, we moved to the forming stakes and rounded out the form with rawhide hammers. The stakes we used were a mushroom stake and a T-shaped raising stake.

Next we painted or sprayed on klyfire with 2 drops of Dawn dish detergent in it so it wetted the surface well. No, we did not do any fancy cleaning. We didn't need to. We used lead-free colors that worked directly on copper, 2 coats. The enamel must be dry before firing. You need to fire hot-between 1550^o to 1600^o. You shouldn't use colors that are too light or too dark. Her recommended list of Thompson Lead-free transparents are 2910, 2660, 2140, 2810, 2110 and 2520. You must enamel both sides at the same time because the metal is so thin. You must be careful how you trivet (the bowl edges cannot rest on a v-shaped trivet with the opening down as the edges are so thin the bowl will be deformed).

Firing time is approximately 1 minute. If the bowl's edge is rough due to over-firing, just lightly grind it with a diamond tool. According to Jean, "These bowls are rich and elegant, but somewhat fragile. Pretend they are pysanki eggs." Thank you Jean. I love my egg, er... I mean enamel bowl. Who says you can't teach old dogs new tricks?

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