



**METAL
ARTS**
SOCIETY OF
SOUTHERN CALIFORNIA

May/June 2010

DEMO DAY 2010



Please join us for a day
of maker demonstrations

Saturday, May 15th

El Camino College
(Art Building – Room 133)

Fee - \$15.00
(includes lunch)

9:30-10am: Check-in, coffee and intros

10am: Demos start promptly

3pm: MASSC Fundraising Raffle

Look what you get, all in one action-packed day

Melinda Alexander- Riveted Stone Setting-

Capture a stone with the simple technique of rivet
Metalsmithmelinda@yahoo.com

Marne Ryan-Organic Metals-The opportunity
to play with fire constructively while creating rich textures
in sterling silver. www.marneryan.com

Sandra VanderMey-Coloring Titanium- Enhance your expressions by adding the language of color. tqween@roadrunner.com

Connie Fox-Define Design-This demo will cover several strategies for clarifying, deepening, and expanding your awareness of your personal jewelry design sensibility. www.conniefox.com

Ruth Shapiro-Put Your Best foot Forward- Learn how to make displays that will enhance your work. www.ruthshapiro.etsy.com

There is no space limitation. Everyone is welcome. You are not required to be a MASSC member. However, you do need to register. Make your reservation, and pay online via a credit card at www.massconline.com.

Please make your reservations by May 12, 2010. so we can order enough lunches.

You may also mail in the form on the back cover with your check, or simply register at the door.

Join us for the year's most informative and fun events. Brenda Wey-MASSC – Program Chair designsbybrendawey@yahoo.com

Idyllwild Metals Week

<http://www.idyllwildarts.org>

Metals Week 2010 This week of intensive metals studies will begin on Sunday, June 27 and run through Thursday, July 1. You will have the opportunity to work with one of six outstanding jewelers/metalsmiths. This schedule offers the opportunity of a rich and well-rounded experience with intensive studies focusing in the area and with the instructor you have chosen.

Class size is limited to allow for maximum interaction among participants and with the instructors. The metals studios are equipped with torches and large equipment as needed for the classes.

Etching - Deborah E. Love Jemmott
Forging Neck Collars, Pendants & Slides - Fred Zweig
Resin Inlay - Karen Christians
Sculpted Bezels & Non-Traditional Stone Settings - Pauline Warg
Trapping Found Objects - Joanna Gollberg
Tool Making & Alterations - Val Link



MASSC Video Library Now Available on DVD

The MASSC video library currently has 18 videos on DVD of past workshops that members can check out. These DVDs are direct videotapes of actual workshops and have not been edited. Watching a MASSC workshop video is akin to being there in person.

Workshop Videos Include:

Alison Antleman - Custom Clasps
Belle Brooke Barer - Sculptural Hollow Ring
Diane Falkenhagen - Mixed Media Techniques for Jewelry
Leslee Frumin - Classy Clasps
Mary Lee Hu - Weaving and Chains
Charles Lewton Brain - Fold Folding
Betsy Manheim - Fold Forming
Trish McAleer - Metal Corrugation
Bruce Metcalf - Jewelry Alternatives

Ben Neubauer - Wire Fabrication
Harold O'Connor - Surface Embellishments & Efficient Workshop Methods
Katherine Palochak - Tufa Casting
2Roses - Metal Patination
Carol Sivets - Metal Reticulation
Lisa Slovis Mandel - Hydraulic Press
Carl Stanley - Cuff Bracelet
Pauline Warg - Metal Beads
Wayne Werner - Stone Setting

A \$20 donation is necessary to check out each DVD. This includes the use of the DVD plus 2-way shipping. There is no additional security deposit. Members can keep each DVD for up to 30 days. Videos can be checked out on the MASSC website at www.massconline.com. Click the "Video Library" link on the home page.

MASSC Board of Directors

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MASSC Newsgroup: MetalArtsSociety-subscribe@yahoogroups.com	

MASSC serves the needs and interests of artists working in metals and provides an environment for the exchange of information, instructional workshops, demonstrations, lectures, and panel discussions. Annual dues (Sept 1-Aug 31); Regular Member, \$30; Family, \$45; Full-time Student \$20. Please add \$5 to your annual dues if you would like to receive a printed copy of the MASSC newsletter. All others will receive the newsletter via email. Membership forms are available at www.MASSCOnline.com



Are you taking advantage of everything your MASSC membership has to offer?

Did you know that MASSC has a section on our webpage to promote member's sites? Do you have a website for your metal work? Are you selling through Etsy, Crafterhaus or similar page? How about a

link to your Flickr page showcasing your metal work? Having MASSC link to your website is an easy way to promote your work.

Are you promoting yourself through the MASSC newsletter? Our newsletter is sent to many colleges, facilities and suppliers in addition to going to all our members. Have you sent in a photo of your work to be featured in the MASSC newsletter? Have you notified the editor when you have work published in a book or magazine? Awards! Accolades! Let MASSC give you a shout out via the newsletter.

Have you looked into the MASSC video library recently? There are currently 18 workshop tapes available for checkout and we'll be adding more in the future. The video library is only available to MASSC members.

Are you signed up for the MASSC Yahoo group? Do you have a show or exhibit coming up? Are you teaching a metals class you'd like to let others know about? As a MASSC member, you are welcome to post your events (1 post per event please) to this list, to inform the 450 subscribers what you're up to. While everyone can subscribe and read the posts, only MASSC members can list an event they are participating in. Do you have a technique question? Need help finding a supplier? Our members are always very helpful. The MASSC Yahoo list is moderated – No Spam!

Are you on Facebook? MASSC is! Please join our group and share your thoughts. The MASSC Facebook group is open to all. Keep up to date with your metals community.

Ketarah Shaffer
President, MASSC

TOOL LOVE

ELECTROLYTIC RUST REMOVAL

by Kevin Chamberlain



BEFORE



AFTER

Cleaning and restoring old hand tools is an ongoing concern for anyone using them, or interested in collecting old tools, since one rarely finds tools in mint condition. It is much more common to find tools showing the combined effects of use, abuse, neglect and simple ageing.

Removal of rust from old tools or other artifacts may or may not be a desirable goal. In some cases (museum specimens) stabilization to prevent further deterioration may be all that is necessary. Rust may be regarded as undesirable by tool users or collectors because it obscures identifying marks, causes seizure of moving parts, creates an unpleasant rough texture to the touch, stains the hands and/or the workpiece, or is simply unsightly. I believe rust removal is often justified, but the method chosen should not alter the surface in other ways and should result in a reasonably attractive surface appearance.

The electrolytic method of rust removal meets these

aims very well and is also a gentle, cheap and adaptable method.

What is Rust?

Rust arises from the surface oxidation of iron or steel in the presence of atmospheric oxygen and moisture. As the rust forms, the surface of the iron is eaten away, sometimes evenly, but often deep local pitting occurs beneath wart-like protuberances. Rust occupies more volume than the iron it replaces, and so moving parts will tend to seize as they rust.

The Electrolytic Method of Rust Removal

The electrolytic method is a cheap, gentle and effective method which causes minimal alteration to the metal surface. It may seem complex, but is actually easy to set up and use. It is quite safe, provided certain sensible precautions are taken (see below). The electrolytic method involves immersing the rusty object in an electrically-conducting solution of washing soda (sodium carbonate). The negative lead (black)

from a battery charger is attached to the object, and the positive (red) lead is attached to a steel electrode dipping into the solution. When the current is turned on, electrochemical reduction reactions occur at the metal/oxide interface on the object's surface. These reductions loosen the rust layer, allowing it to be easily brushed off. Of course, removal of rust will reveal any damage to the surface, such as pitting, which has already occurred.

Important Safety Precautions

1. Since pure water is a poor conductor of electricity, a soluble salt, called an electrolyte, has to be added to make an electrically conducting solution. The best salt to use is sodium carbonate (washing soda). A packet can be bought in supermarkets for a few dollars. Washing soda solutions are alkaline and will irritate the skin and especially the eyes. Always use eye protection and gloves and wash off any spills immediately. Do not try to use other salts - no better results will be obtained and dangerous effects may occur. Caustic soda, for example, is far too corrosive, and even strong solutions of ordinary table salt will generate toxic chlorine gas at the positive electrode.

2. The battery charger must be completely shielded from the solutions which conduct electricity. Make sure no spills can touch the battery charger - especially when it is unattended.

3. A major reaction occurring in the bath is the splitting of water into hydrogen gas at the negative electrode, and oxygen at the positive electrode. Hydrogen will combine explosively with oxygen or air if ignited. (Remember the Hindenburg!) All flames (including cigarettes) must be removed from the area, and sparks caused by touching the leads together must be avoided. The work should be well ventilated to dilute

and remove these gases safely. Do not use this method in a confined, poorly ventilated area.

4. Waterproof gloves should always be worn when working with the bath and the bath sludge should be disposed of appropriately.

Preparation of the Electrolyte Solution

A sufficient concentration of washing soda is about 10 gram/litre (about 1 teaspoon per pint). The concentration may be increased somewhat, but the results will not change greatly. Make sure all the crystals have dissolved before using the solution.

The Electrolytic Bath

The simplest variant of this method requires a non conducting inert plastic container. After removing any wooden handles, brass fittings, etc. from the object, sufficient washing soda solution is added to completely submerge it. A stainless steel strip is recommended for the positive electrode or anode (e.g.

a piece about 2-3" wide and long enough to emerge from the solution). Ordinary scrap iron or steel can be used, but the surface will quickly clog up with corrosion. Do not use copper or other metals, as these will be rapidly eaten away.

The reactions at the anode involve the production of bubbles of oxygen gas from oxidation of water, plus the direct oxidation of the metal electrode. Stainless steel is most resistant to the latter process, but even it may show some minor pitting after a while. The anode should be brushed clean at intervals. The red lead from the battery charger should be clipped to the anode where it emerges from the solution. If this attachment clip dips under the surface, it will be eaten away. The negative lead (black) is attached to the rusty object. In this case, the attachment clip may be submerged under the solution - corrosion does not occur at the negative electrode (cathode). It is very important to have good contact at the attach-



continued on page 6

ment point, so these should be cleaned by wire brush or emery paper. The object and the positive electrode should be separated by at least a few inches. If they are allowed to touch, a short circuit will occur and the battery charger may be damaged.

The Battery Charger

Any 6 or 12-volt battery charger will work, provided it can produce a few amps of direct (DC) current. A current of about two amps at 12 volts is typical (a charger with a current meter is useful as it shows you what is happening). If several objects are attached in parallel, or a very large object is attached, the current may rise. Be careful not to exceed the capacity of your charger. The current may be reduced by increasing the separation between the object and the anode or by diluting the solution with water. A car battery would also work as a DC power source.

The Process

Once the circuit is completed, tiny bubbles will stream from both electrodes. The time required for effective de-rusting will vary from 30 minutes for small objects (such as auger bits) to many hours for large objects such as a vise. Overnight operation is common. No harm is done by leaving the circuit on for long periods, as long as the charger does not overheat or gases do not build up in an unventilated area. After a time the object should be rotated to avoid "shadow" effects (uneven de-rusting). As time passes, some of the rust will fall off and sink to the bottom of the container. When enough time has elapsed (learned mainly by experience), turn off the charger, remove the object from the bath and rinse off the electrolyte with water.

The residual rust will now appear as a dark surface sludge which can be easily removed with a hand wire brush or plastic scourer. This is less messy when done under water (e.g. in a water-filled bucket). After rinsing and thorough drying, the object will now appear free of red rust, but there may still be a thin layer of closely-adherent black oxide.

For certain antique artifacts, this grey-black appearance may be quite attractive. However, brief power brushing will quickly remove this thin layer and give

a progressively shiny and burnished appearance.

Baking in an oven for an hour or two at about 150°C (300°F) is an option which will give the objects an attractive bronze-yellow patina, deter further rusting and protect against hydrogen embrittlement (see below). Alternatively a rust inhibitor such as RP-7 may be applied, or the object simply oiled or waxed to deter future rusting.

The method works best on objects that are electrically well-connected. Ideal objects for de-rusting by this method include augurs, axe heads, saws, single bow hand shears, plane bodies, cast iron pots etc. Whenever the object has multiple parts, the electrical contact between the parts will affect the results obtained. If the contact points are coated with rust, dirt or grease, little current will flow from one part to the next and de-rusting may be slow. If only a few parts are involved, it is easy to connect each part separately by providing several branches from the negative lead or use short leads to connect each part to the next using clean contact points.

Hydrogen Embrittlement of Steel - A Cautionary Note

Atoms of hydrogen absorbed by steel are known to enter the lattice of iron atoms and prevent the layers from sliding past each other easily. This causes the steel to become more brittle and liable to crack. The absorption of hydrogen by steel is a familiar problem in industry which arises during steel refining, heat treatment, acid pickling or electro-plating. It can also happen as a result of simple corrosion. The standard remedy is to bake the objects in ovens to drive out the absorbed hydrogen (200°C for four hours would be a typical regime in industry). Hydrogen embrittlement may occur to some extent during electrolytic de-rusting. This may be a cause for concern with saws or other edge tools. Baking the tool in the oven for hour or so at about 150°C (300° F) should remove absorbed hydrogen. Note that this baking temperatures is low enough to leave the temper of most steels unaffected. Since hydrogen embrittlement is reversible, it should not cause a problem.



Over the last year, materials of a more untraditional bent—at least in the fine jewelry world—have infiltrated the market, with ceramics, wood and leather, among others, adding an unexpected edge to precious metals and diamonds.



As seen on the New York Fashion Week runways for spring, where a multitude of models were styled in both fine and costume jewelry designs, the evolution is right on cue. One need look no further than designer Diane von Furstenberg’s spring 2010 show, where the models hit the runway in stacks of woven bangles piled



ANYTHING GOES



up high and with gold “Sutra” bracelets from the designer’s collaboration with H. Stern insouciantly thrown in. The overall message: bohemian chic that isn’t too studied or extravagant—with the latter being important to the current bling-averse mindset of customers.



Gold isn’t the only metal that has been benefiting though. With its lower price point, designers working in sterling silver have had an opportunity to experiment and create bigger, bolder styles. Juxtaposing silver with enamel, wood or leather, designers are adding a colorful dash of whimsy to the white metal, plus an intriguing interplay of textures.

Given the wallet-friendly prices, plus fashion’s nod of approval for mixed materials and “anything-goes” layering and stacking, this trend is one primed for self-purchasing success.



REGISTRATION FORM MASSC Demo Day – May 15th, 2010

Send a check for \$15.00 payable to MASSC, to:

Brenda Wey, 12 Verona Lane, Foothill Ranch, CA 92610

Name _____

Signature _____

Address _____

Phone _____

E-mail _____

Liability Waiver: In consideration of participating in this activity, and to the extent permitted by the law, I hereby release, indemnify, defend and hold harmless on behalf of myself, the Metal Arts Society of Southern California (MASSC) and its officers, clients, agents or employees, and El Camino College, and Melinda Alexander, Marne Ryan, Sandra VanderMey, Connie Fox, Ruth Shapiro from and against any and all liabilities, claims, penalties, losses, or expenses (including attorneys' fees), of any kind or nature whatsoever, whether related to bodily injury, property damage or any other form of injury or loss to myself, caused by any negligent act or omission of Metal Arts Society of Southern California (MASSC) or its officers, clients, agents or employees, or El Camino College, and Melinda Alexander, Marne Ryan, Sandra VanderMey, Connie Fox, Ruth Shapiro arising out of or in any way related to participation in the activity for which I am participating. I acknowledge that the activity to which this release applies can be hazardous and as a result of signing this form, I am accepting those risks for myself. I give permission to Metal Arts Society of Southern California (MASSC) to take photographs and/or video tape me while participating in this activity for use in future Metal Arts Society of Southern California (MASSC) publicity and/or video library rentals and that I will not receive any compensation for such use. I certify that I have read and understand this waiver and release as it applies to me.



2919 West Pendleton Ave, Santa Ana CA 92704

Upcoming Events

May 15th, 2010 DEMO DAY
El Camino College

Aug 28, 2010
Victoria Landford - Eastern Repousse

September 2010
Dave Jones - Hand Engraving
El Camino College

Feb 2011
Betty Helen Longhi - Shell Forming

NEXT MASSC BOARD MEETING
June 13, 2010

Did you change your address or email? Don't miss your MASSC newsletter and workshop announcements. Send changes to Diane Weimer diaweimer@verizon.net