Enameling Pictures

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January 15, 2020

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Background

This document provides a list of pictures used as a reference for the general enameling procedure I use and have been working on refining. The intent is that these pictures provide reasonable insight on how this enameling process goes and serve as pictorial notes that will help the reader visualize what occurs over the course of enameling.

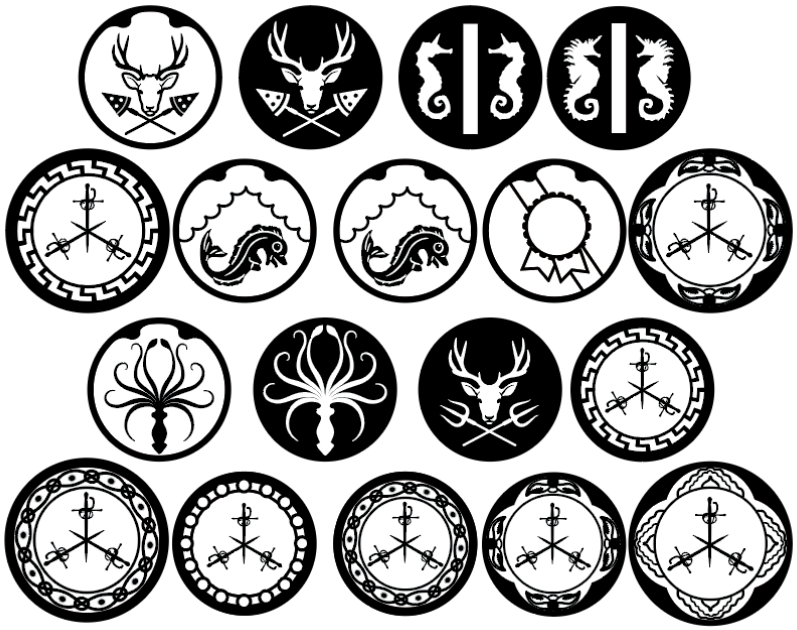

Figure 1: Sample Illustrator file of Medallions drawn by Rajan (Anya). These will be printed on Press-n-Peel (PnP) paper to be transferred.

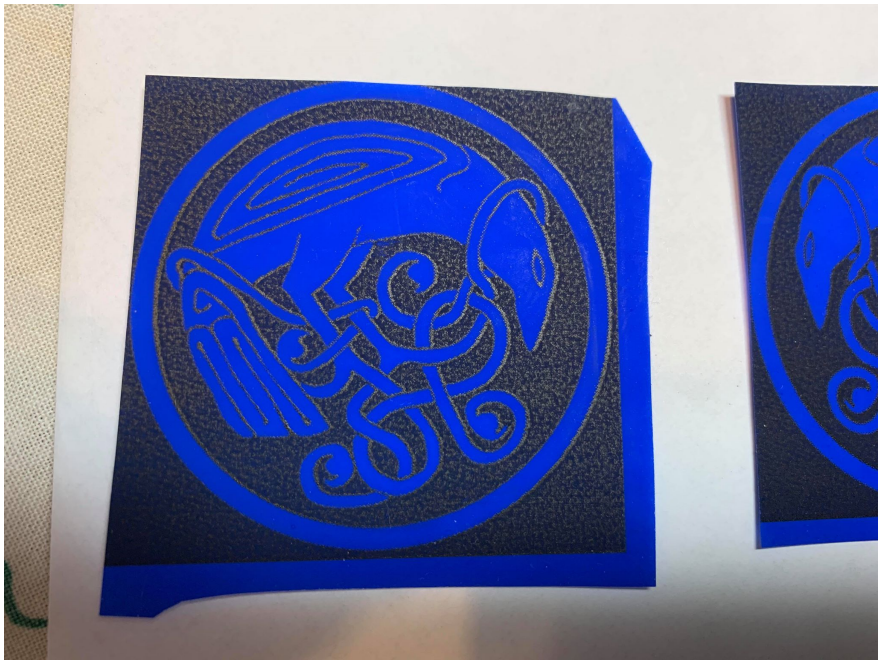

Figure 2: Example of drawing printed onto PnP (Art by Brose - this is her sheet). This must be printed with a laser printer. Inkjet will not work.

Figure 3: Resist Applied to copper with PnP Blue. Testor's paint was used to fill in the gaps and seal the metal to the foam block

Figure 4: Yew Bow medallion in the etchant bath. Notice how the resist is preventing the rest of the metal from dissolving

Figure 5: Etched copper cleaned and awaiting wet enamel packing

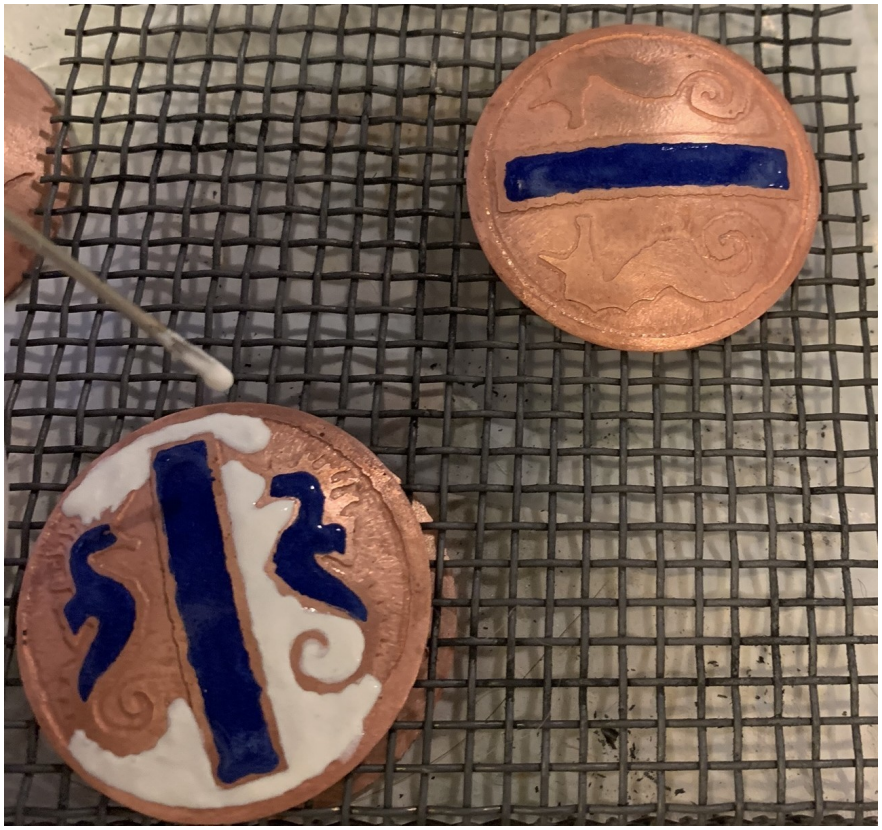

Figure 6: White Scarf medallions in the process of packing. Notice the enamel is wet, which aids in the process

Figure 7: Two grape medallions on the right are dry and ready to be fired. If the enamel is too wet when it goes into the kiln the water vaporizes and interferes with enamel quality

Figure 8: On the left, stoned and cleaned medallions ready for flash firing. On the right, medallions just out of the kiln. The fire scale is present and the enamel is slightly dark

Figure 9: This red color just out of the kiln is black which can be seen in the previous image, but as it cools it goes back into this red. Notice how dark spots remain on the upper medallion - a sign that the red enamel is too thin

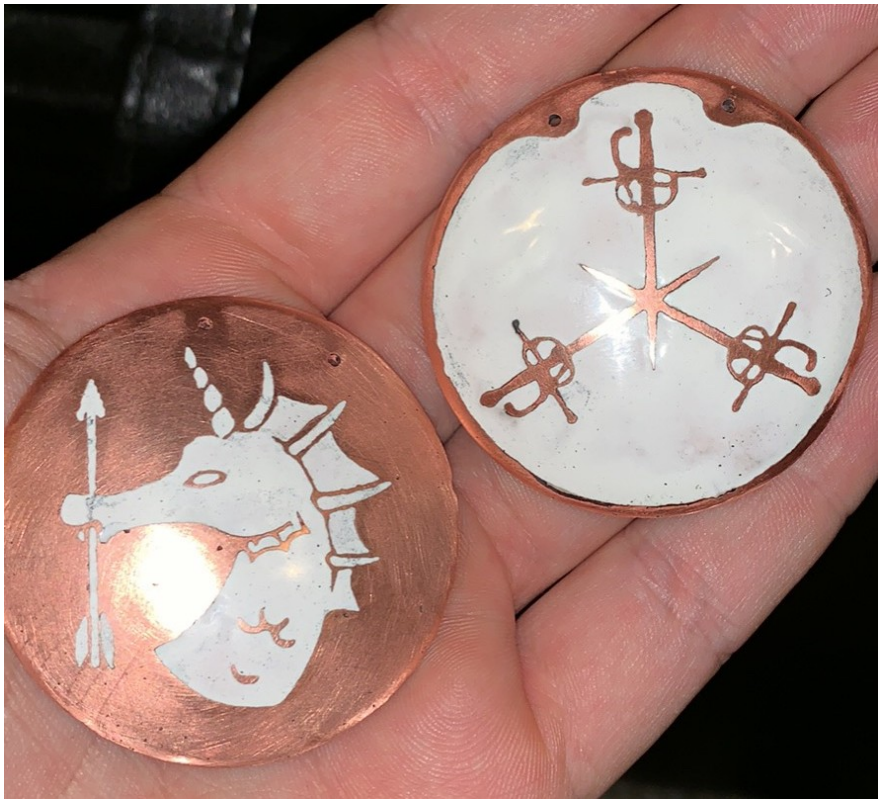

Figure 10: Yew Bow and MoD medallions after stoning and light sanding. Stoning grinds excess glass to reveal detail and level. Additionally, these two are good quality. The detail of the Yew Bow shows really nicely and its surface is smooth and shiny

Figure 11: Tempranillo grape medallion and a hops medallion. These two are examples of good quality enameling. The surface is shiny and the glass and metal are smooth across the entire surface

Figure 12: These medallions are medieval reproductions from the Enamels of Limoges Book.[2] See the next image for the book page. The medallion on the left has several flaws. The yellow enamel is finicky, the image is backward, and grid marks are present from where the heat transfer failed. The medallion on the right is in a similar state. Both need further processing

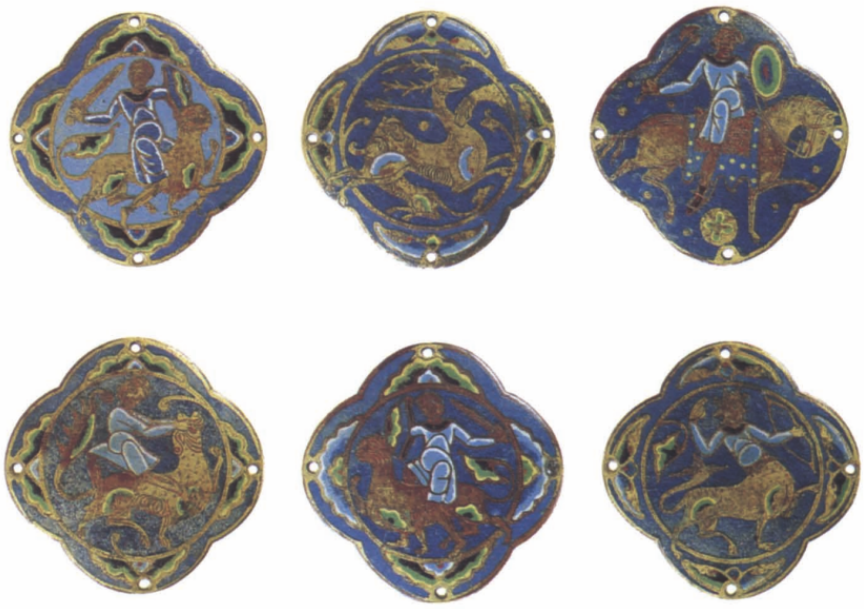

Figure 13: This is an image from the Enamels of Limoges book.[4] These quatrefoil medallions provided the art and inspiration for the enamels in the previous image.

[2]J. P. O'Neill, Musée du Louvre, and N. Y. Metropolitan Museum of Art New York, *Enamels of Limoges: 1100-1350* (Metropolitan Museum of Art, 1996), https://books.google.com/books?id=i4okAQAAMAAJ.

[4]Enamels of Limoges, 35. Medallions and Straps from a Coffret, pg. 152-153

Figure 14: This White Scarf medallion was in the etchant bath for too long. Not good.

Figure 15: A crack in the enamel is visible on the bottom along with a low enamel spot on the right side. This is the result of several factors: etch too deep, inconsistent doming, and inconsistent resist applied

Figure 16: In addition to the PnP transfer paper, we use these tools to finish up the resist prior to etching. Testor's paint (any is fine, just not metallic!) is used to seal the metal and paint what the PnP missed. The paintbrush is used to application. The steel 'needle tool' is used for scratching away resist to provide enhances detail

Figure 17: These are what are used to pack the enamel onto the metal surface. The red enamel here is placed into a 2 oz condiment container (this prevents the main stock from becoming contaminated). The steel paddle tool is used to transfer enamel to the container. The needle tool is used again here to apply enamel in detail to the surface. Next to it is a wooden dowel with a darning needle, also used to apply enamel. A small paintbrush is also used for the same purpose

Bibliography

Ben, Dory. *Electrolytic Etching Copper and Silver Using Copper Nitrate, a Replacement for Table Salt (Nacl)*, n.d. https://carolholaday.files.wordpress.com/2013/02/copper-nitrate-electro-etching-instruction.pdf.

Circuits, Open. "Chemical Etchants." Open Circuits, n.d. http://www.opencircuits.com/Chemical_Etchants.

E., Jemmott Deborah. "Galvanic Etching Checklist," n.d. https://www.ganoksin.com/ftp/Galvanic-Etching.pdf.

Hawthorne, J. G., and C. S. Smith. *On Divers Arts: The Foremost Medieval Treatise on Painting, Glassmaking, and Metalwork*. Dover Art Instruction. Dover Publications, 1979. https://books.google.com/books?id=MMiLTJqvYnYC.

Hošek, Jiří, Á Thiele, Márk Hazamza, and Béla Török. "Revealing the Surface Pattern of Medieval Pattern Welded Iron Objects - Etching Tests Conducted on Reconstructed Composites." *Archeologia Technica*, 2015. http://www.bucavasgyuro.net/data/publikaciok/Folyoi+konfk/2014AT_Etching.pdf.

Leber, Alice. *2017 Champlevé Etching and Enameling Procedure*, 2017.

———. *Home Etching for Copper or Brass*, 2017.

marcellahella. "Salt and Water Etching," n.d. https://www.instructables.com/id/SALT-AND-WATER-ETCHING/.

O'Neill, J. P., Musée du Louvre, and N. Y. Metropolitan Museum of Art New York. *Enamels of Limoges: 1100-1350*. Metropolitan Museum of Art, 1996. https://books.google.com/books?id=i4okAQAAMAAJ.

Philip, W. *A Booke of Secrets: Shewing Diuers Waies to Make and Prepare All Sorts of Inke, and Colours ... and to Graue with Strong Water in Steele and Iron ...* A. Islip for E. White, 1596. https://books.google.com/books?id=vuBanQEACAAJ.

Price, B. R., and A. R. Williams. *Techniques of Medieval Armour Reproduction: The 14th Century*. Paladin Press, 2000. https://books.google.com/books?id=5ekKAAAACAAJ.

Wardropper, I., and J. B. Day. *Limoges Enamels at the Frick Collection*. Frick Collection, 2015. https://books.google.com/books?id=3LcNrgEACAAJ.