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## LOSS COMPENSATION ON A MICHOACAN INLAID LACQUER TRAY USING PIGMENTED ACRYLOID B72 FILM

Paula Hobart, Mina Thompson, Maureen Russell

### Abstract/Introduction

This paper illustrates an interesting loss compensation technique for a Mexican Michoacan wooden lacquer tray owned by the Museum of International Folk Art (MOIFA) in Santa Fe, NM (Fig.1). The tray dates to the 1920s and was made using the traditional inlaid technique called *embutida* or *incrustada*. The tray had a large loss in the lacquer layer along the rim. A footprint of the original inlaid design was visible in the area of loss due to staining of the wooden substrate from the original lacquer. Pigmented Acryloid B-72 in acetone was cast in thin films and cut to fit the inlaid design in the area of loss. This type of loss compensation simulates the traditional Michoacan inlaid technique by using the visible design pattern in the wooden substrate. Traditional gap-filling materials and methods were less suitable for this particular object due to the thinness of the loss and the desire to make use of the visible design pattern in the substrate. Advantages of this technique include minimal intervention and a dry fill material with no residues to penetrate into the substrate, producing an easily reversible fill. This loss compensation technique can be applied to other materials with similar requirements.



Figure 1. Michoacan Inlaid lacquer tray, ca.1920's, courtesy Museum of International Folk Art, Santa Fe, New Mexico, acc. No. A.78, 42-5.

## Traditional Michoacan Inlaid Technique

### Traditional Materials:

- *Aje*: a wormlike insect used to produce an oily waxy substance. The *aje* insects are dropped in boiling water until completely disintegrated into a gelatinous substance that is strained, rinsed in cold water and dried to form a solid mass. The *aje* is mixed with *chia* oil and powdered dolomite to produce the size or *sisá*, which is the basis of the lacquer.
- *Chia*: oil extracted from the seed of a wild sage, *salvia chian*. Chia oil is a principal ingredient in the size mixed with *aje* oil and powdered dolomite.
- Powdered dolomite: a brittle mineral containing calcium and magnesium carbonate plentiful around Michoacan.
- Ground earth pigments mixed with the size.

**Step 1:** The wooden *batae* (tray) is shaped by scraping the inside. Woods that have little natural resin are used because they readily absorb the oils.

**Step 2:** The base/background color is built up in layers by successive applications (approx. six coats) of size and powdered pigments applied with the fingers and rubbed with the palm of the hand. The base coat is then allowed to cure for 3 or 4 days.

**Step 3:** The design for the next color is incised in the base coat of lacquer and peeled away to reveal the underlying wood.

**Step 4:** For the next color, size and powdered pigments are mixed together and built up using the same technique as the base coat until the design area is level with the background. The tray is set aside to dry for 3 or 4 days. Step 2 and 3 are repeated for each additional color.



Figure 7. Detail of tray owned by Museum of International Folk Art in raking light, showing characteristic raised edges of inlaid technique.

**Casting B-72: Film Recipe and Method (Fig. 8-13)**



Figure 8. Dry powdered pigments are used to tone the resin to match the area of loss. The pigments should be milled before mixing to produce a homogenous film. A small amount of xylene is used to wet the dry pigments for mulling. After mulling, the pigment and xylene paste is mixed with 50% B-72 in acetone (w/v).



Figure 9. Unsuccessful film with air bubbles



Figure 10. After casting many unsuccessful films with air bubbles, the authors consulted Stephen Koob, who recommended casting the pigmented resin on a polyethylene substrate and covering for the first 24 hours to restrict but not prevent solvent evaporation. A plastic bag works well as long as supports are used to prevent the top of the bag from touching the B-72 film. The enclosed air space creates a xylenes vapor chamber that prevents skin formation on the surface of the B-72 film during curing (Koob, 2005).

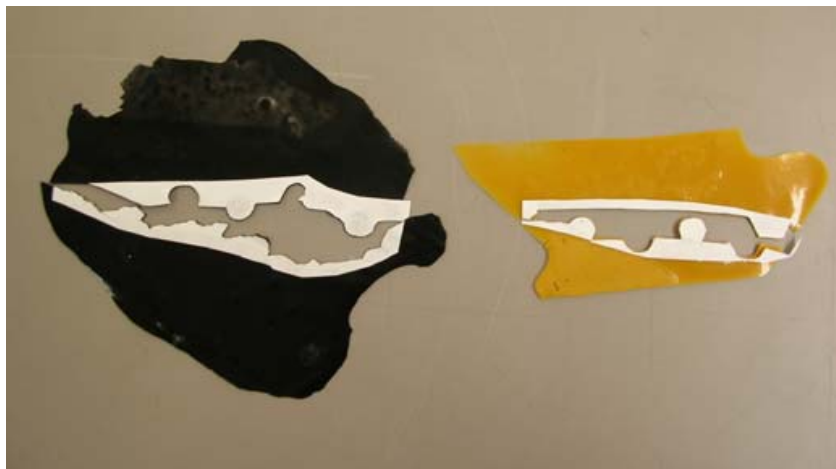


Figure 11. The area of loss on the object is traced through a sheet of Mylar. A Xeroxed copy of the Mylar tracing is attached to the B-72 film using acetone, and the shape of the loss is cut from the film using fine scissors. The working properties for cutting and shaping are best between 2-4 days after casting. The film is too flexible for cutting before 2 days and too brittle after 4 days.



Figure 12. Final shape of B-72 film



Figure 13. The cut-out sections are fused together, their surfaces smoothed, and the film thinned using a heated spatula between sheets of silicone release Mylar.

### Before Treatment



Figure 14. Shallow loss along the rim edge approximately 5” wide. Considerations in loss compensation included reversibility, visual integration while remaining visible as a repair and flexibility with regard to adhesion of the fill material to accommodate any expansion and contraction of the wood.

### During Treatment

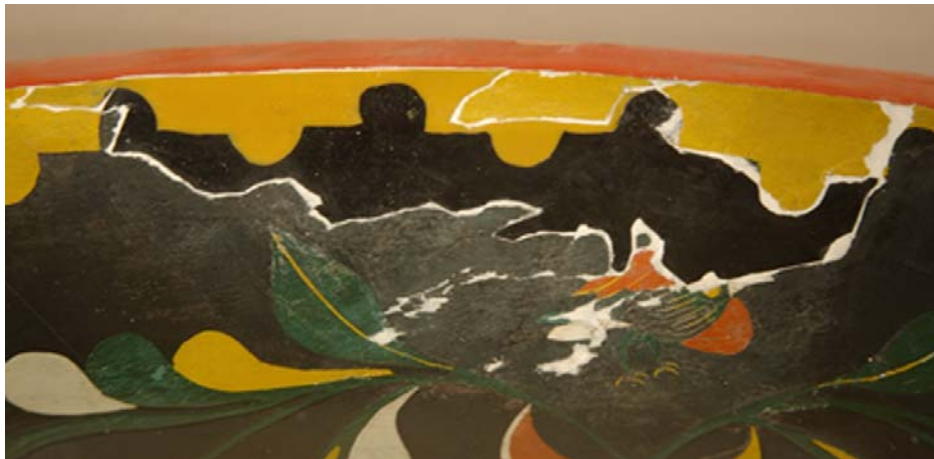


Figure 15. The pigmented B-72 film is attached in the area of loss using an acetone cotton swab to make the back of the film tacky and then pressing into place. The adhesion of the film to the substrate is weak but secure. Once the film is in place, final filling can be done in the small spaces and gaps around the film using a commercial gap-filling material such as Dap vinyl spackling paste or Polyfix (calcium carbonate in PVOH binder) and inpainting to visually integrate.

## After Treatment



Figure 16. Pigmented B-72 film is a non-invasive, easily reversible treatment approach that remains visible as a repair while integrating visually with the surrounding area.

## Suppliers

Dry powdered pigments

Conservation Materials Ltd., 340 Freeport Blvd., Sparks, NV 89431

Acryloid (Paraloid) B-72: ethyl methacrylate copolymer in a 50% solution in acetone

Polyfix, (calcium carbonate in PVOH binder)

Conservation Support Systems, P.O. Box 91746, Santa Barbara, CA 93190, (805) 682-9843.

DAP vinyl spackling (proprietary vinyl spackling compound)

DAP, Inc. Dayton, OH 45401; widely available in hardware stores.

Silicone coated polyester film (Mylar)

University Products, Inc. 517 Main Street, P.O. Box 101 Holyoke, MA 01041-0101, (800) 628-1912.

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