Teaching an Old Dog New Tricks:
The Case of the RCA "Composition" Nipper

Nipper, the actual dog, was born in England in 1884. He was so named because of his tendency to nip the backs of visitors' legs. When his first master, Mark Barraud, died destitute in Bristol, England in 1887, Nipper was taken to Liverpool by Mark's younger brother Francis, a painter. There, Nipper discovered the phonograph, a cylinder recording and playing machine. Francis Barraud often noticed how puzzled Nipper was to make out where the voice came from. This scene must have been indelibly printed in Barraud's brain, for it was three years after Nipper died in September 1895 that he committed it to canvas.

In 1898, Barraud completed the painting and registered it as *DogLooking at and Listening to a Phonograph*. Barraud then decided to rename the painting *His Master's Voice* and tried to exhibit it at the Royal Academy, but was turned down. He had no more luck trying to offer it for reproduction in magazines. "No one would know what the dog was doing" was given as the reason. Barraud sold a revised version of the painting to the Grammaphone Company after changing the cylinder phonograph to a grammaphone in 1899. The painting and title were finally registered as a trademark in 1910.

When the 36" high, 1940s RCA NIPPER arrived for treatment, he was quite literally, on his last legs. The Nipper displays were used in shop front windows of music stores during the late 1940s through the1950s. It was evident from the nature of the cracking that one side was more damaged from heat and light. The legs were actually detaching from the torso, and he could no longer sit up.

The owner had contacted a company that had treated a similar 1950s papier mache model of Nipper manufactured by the Old King Cole Company in Canton, Ohio. However, our specific model was a composition material of unknown origin and no markings. The Johnson Victrola Museum in Delaware did not have any such composition pieces in its own collection but referred me to several "Nipper" enthusiasts. These helpful folks were able to tie the style of this Nipper to a descendant company of Old King Cole that began making polyethylene Nippers. However, those were actually vacuum formed as opposed to this one, which was poured into a mold. I was not able to retrieve any information on these companies. Thus began a year-long effort to find a treatment that would keep the owner from abandoning him altogether, and which would teach me much about the complicated nature of "composition."

by Maria Valentina Sheets

It has been said that plastics are born to die. In an ideal world, all of our clients would have enough resources to be able to afford sample analysis by conservation scientists. Every compositional recipe seems to vary greatly with not only each manufacture, but also each year of production. However, even after a synthetic composition is known, there is the challenge of understanding how modern materials used in conservation will respond. There is very little information available when it comes to practical treatments on synthetic composition.

The client could not afford a sample analysis for Nipper. I felt certain his future was bleak. I could understand why the client was not hopeful of the outcome; she had consulted several "experts" with no success in finding someone willing to treat him. I had had some experience with various composition materials, a workshop in plastics, and an existing network with those familiar with plastics history and research. At the time of Nipper's arrival, I worked for Art Restorations, Inc. in Dallas, Texas. With a staff of 14 other conservators familiar with the treatment issues of Texas-heat damaged artifacts, I felt, at the very least, I could proceed with a sensitivity and understanding of how this cultural icon could be preserved. Since client was not willing to invest much into his treatment and future unless he could be trained to sit upright, for the better part of the year my obsession with him was mostly on a pro-bono basis.

The exterior surface of the Nipper was painted a very matte "titanium buff" with a slightly glossier brown on the ears. It was found that the surface color showed no apparent change when swabbed with distilled water or ethyl-alcohol while being very sensitive to acetone, toluene, and MEK. By noting the extreme matte appearance and the timeline of construction, it was assumed that it might be tempera.

Someone had, perhaps twenty years earlier, attempted a repair using a coarse burlap secured with an undetermined adhesive to the interior surface. The burlap support itself appeared stable but was slowly forming subtle stress impressions on the external structure of Nipper.

The interior of Nipper was not coated except for the over-painted previous repairs and absorbed all solvents; toluene and acetone were least absorbed due to rapid rates of evaporation. There were several small pieces that belonged along the bottom but were considered "floaters" with no matching surface join. It was determined that these were to be used to test the boundaries of the composition.

After soaking in a variety of solvents, small test pieces were found to be most resilient to distilled water and ethyl alcohol. Mineral spirits broke the sample into larger pieces while acetone, toluene, and MEK dissolved its sample to powdery bits. Due to the size of the samples, the pH tests were inconclusive. The material had small bits of rubbery substance mixed with some calcium carbonate-like filler, unfortunately it was too small for spot tests to determine exactly what type of rubber. Based on the estimated manufacturing date it could have been vulcanized or silicone rubber.

The obvious challenge was developing a technique that would secure the legs into position, be reversible, be somewhat flexible with this ever-changing composition, and with virtually no budget. Removing the old burlap repair would have required excessive risks in repeatedly saturating a large mass of the interior. Vapor treatments were not an option. In spite of the slight distortion of the surface, it appeared relatively stable for its age and provided some strength to the structure. Because it was not directly in the break areas and the client wanted Nipper home in her lifetime, I decided not to attempt reversal.

Many options for structural treatment were considered. Various dry mount films and tapes would not adhere to the interior surface and required excessive heat application. A full internal body support, though still on the wish list, was too expensive. I considered various materials for body supports that could prevent accelerated deterioration of the composition while providing a soft enough surface to move with the piece. I pursued many avenues of research but even the larger labs did not seem confident they could help me without costly analysis. Each procedure was observed over months to see which treatment and reversal of treatment seemed least stressful on the object.

Many of the join surfaces had been compromised and were missing areas similar to the base edges. Though the material would flex somewhat, any attempts to manually reform would only end in more breakage. In past treatments of hollow synthetic objects that had missing areas, I had used patch supports made of spun polyester or japan tissues applied to the inner surface with a PVA. But the interior of this composition Nipper was too absorbant for adhesion without prior consolidation.

Based on tests to the interior of the structure, it was found that Conservation Support Services Acryloid B-72 in acetone (1:1) seemed to best consolidate the interior surface. However, given the many unknowns of the composition, it was desired to keep as much solvent based material away from the structure as possible. For this reason, B-72 was not chosen as the over-all reconstructing adhesive. However, it was decided that by applying B-72 to limited points along

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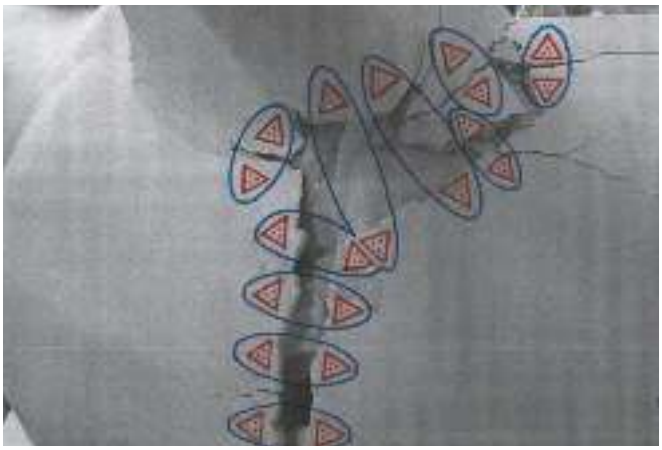

the interior surface, dotting PVA on those consolidated areas, and applying oval shaped strips of Remay across the interior break lines, the legs could be successfully supported in a flexible and reversible manner. The only apparent side effect was the temporary discoloration of the surface during consolidation. Tests of the consolidant over a three month period showed no structural changes. Any cracks or thin breaks, such as those along the ears, were reconstructed using a PVA bulked with Cabosil which provided a somewhat flexible join material.

Due to the extreme warping in the chest area, it was felt that several areas needed a a bit more strength than the polyester method provided. A two-part epoxy putty was chosen as the fill material for the areas along both sides of the front legs. This putty was slightly stronger than acrylic spackle and on tests where abrupt or gradual pressure was applied, the pieces would shift sideways, giving support and simultaneously moving more elastically with the piece.

Though the putty was an appropriate strength, it would *not* be reversible if it made contact with the surface of the join before it cured. A temporary barrier was needed. It was found that Cyclododecane, melted to a liquid consistency in an electric cup warmer and applied by hog's hair brush and minarette to the join area in about a 1/8 inch thickness, would be a good temporary join coating. The thickness would allow for both a fairly accurate putty fill and leave enough room for the flexible PVA/Cabosil bulked adhesive that would secure it around its edges. After the putty was cured, the Cyclododecane was carefully carved away from the putty support's edges and the putty cast gently pulled out of the join area. Even with some manual assistance using scalpel to shave away heavier areas and daily brushing away of the subliming "dust," the remaining Cyclododecane still took about 6 weeks to fully sublimate.

The joins were then coated with the PVA/Cabosil mixture and the cured piece reinserted. Compensated areas were aesthetically integrated using conservative applications of gouache or tinted Golden Restoration Acrylics applied either with a sable brush or in the case of the ears, a Holbein air gun.

Even with best intentions and rigorously testing the materials and their reversibility, there is no guarantee this Nipper will make it through the next century. Like many mixed compositions his structure is very vulnerable and unpredictable. I hope that the restoration of his structure and appearance will encourage future caretakers to find value in prolonging his existence. The last step of the treatment was to educate the client, through intensive documentation, as to why it took over one year to train Nipper to sit upright, and why he is, henceforth and forever, to remain an indoor dog.

Readings:
"Preservation of Plastics," Course Notes. Instructor: Julia Fenn, Campbell Center for Historic Preservation, Mt.Carroll, Illinois, 1999.

"Conservation of Plastics: An Introduction to their History, Manufacture, Deterioration, Identification, and Care," Published by the Con. Unit of the Mus. and Galleries Comm. and the Plastics Hist. Soc., London, 1991.

Saving the Twentieth Century: The Conservation of Modern Materials, edited by David W. Grattan, Canadian Conservation Institute, 1991.

"Identification of Plastics," Course Notes. Instructor: Mary T. Baker, Campbell Center for Historic Preservation, Mt. Carroll, Illinois1999.

From Marble to Chocolate: Conservation of Modern Sculpture, Jackie Heuman, Archetype Publications, 2001.

Plastics: Collecting and Conserving, A. Quye, C. Williamson, K. Charlesworth, NMS Publishing, dist. by Arthur Schwartz and Comp. Inc., 1999.

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