Herculaneum Tripod and Ivory Fragments
A Visible Mount and Reversible Conservation Support

Richard Hards – Senior Mountmaker, Antiquities Conservation, J. Paul Getty Museum
Jessie Arista – Associate Conservator, Antiquities Conservation, J. Paul Getty Museum
Eruption of Mt. Vesuvius

In addition to Pompeii, the eruption of Mt. Vesuvius in 79 CE buried the Villa dei Papiri and surrounding town of Herculaneum.

Image courtesy of Getty Research Institute
Villa dei Papiri

Located in Herculaneum, on the coast of the Bay of Naples, the Villa dei Papiri was one of the most luxurious homes in the Roman Empire prior to the eruption of Mt. Vesuvius.

The Getty Villa is a full-scale replica of this structure as it was known in the 18th Century. Objects found in the Villa dei Papiri were lent to the Getty in 2019 for the exhibition, *After Vesuvius: Treasures from the Villa dei Papiri.*
Villa dei Papiri

In the Fall of 2007, the remnants of three wooden tripods, with veneers of intricate ivory carvings, were unearthed at the Villa dei Papiri. These furniture fragments, which are entirely unique, were preserved beneath meters of pyroclastic flow.
Fragments of the Ivory Tripod

The Tripod lent to the Getty Villa consists of three wooden legs with carved ivory veneer, fragments of hoops, and one loose ivory relief of Dionysos.
3D Scanning the Tripod

While on-site at Herculaneum, Richard used an Artec Space Spider to scan the Tripod fragments. After returning to the Getty Villa, Richard printed 3D replicas, which gave him the freedom to experiment with their positioning. This process was essential for fabricating the mount prior to the Tripod’s arrival for the exhibition.
A Visible Mount

Typically, one of the main objectives in mountmaking is to design a mount that both provides protection and displays the object according to the curator’s vision, while being as invisible as possible.

On rare occasions, however, mountmakers are asked to fabricate a mount that is as equally on display as the object it supports. This was the case with the Herculaneum Tripod and Ivory Fragments.

Digital Image courtesy of M.P. Guidobaldi, Arredi di lusso in legno e avorio da Ercolano, 2010
The primary goal was to design a mount that would provide a realistic framework for viewers to understand the object given its fragmentary nature, but not replicate the original Tripod. Colleagues at both sites agreed it was important to make a distinction between the mount and original object.

With an estimated height and diameter of the original Tripod provided by an archaeologist from Herculaneum, Richard was able to make a blueprint for the mount.
Fabrication of the Tripod’s horizontal rings

After making the blueprint, the first step was to begin fabricating the main framework of the mount. Richard created two identical brass horizontal rings using a Hossfeld bender.
Attachment of the Mount’s Upright Supports

The upright supports of the mount are lengths of 2” x 2” solid brass.

Since the mount would be returning to the lender along with the fragments, Richard designed the mount to be easily disassembled, with most parts joined mechanically.

The uprights were intentionally oversized to allow for the carving of each legs’ profile into the brass, ensuring a sympathetic fit.
Orientation of the Tripod Legs

The next step involved positioning the legs in their proper orientation. Due to loss, each tripod leg varied in height. To determine proper alignment and give the viewer a sense of the furniture’s original assembly, the mortise and tenon joints were used to orient each leg with both of the mount’s horizontal rings.
3D prints used to cut contours into the Mount

3D replicas of the table legs allowed Richard to accurately transfer and carve each profile into the mount.

These photos show the contours cut in the vertical supports to accommodate the irregular profiles of the Tripod’s legs.
The Tripod arrives at the Getty Villa

The Tripod fragments arrived on-site two weeks prior to installation, allowing Richard to begin the process of installing them on the mount.

Using Fix-It, a two-part epoxy putty, an interface was cast between each leg and its corresponding mount in order to provide consistent support across the legs’ fragile surfaces.
Mechanical Clips

Removable stainless steel clips were used to secure the legs to the mount. Where possible, the clips were hidden in the mortise and tenon joints, otherwise, they were placed around the bottom of each leg.
Attaching the Hoop Fragments

Three hoop fragments required separate mounts to secure them to the horizontal rings. The mounts consisted of a backing plate and four removable clips.

Once each fragment was installed in its mount, it was slid into the leg’s joint and fastened to a tab brazed on the horizontal ring.
Mounting the Dionysos Figure

The curator’s vision included reversibly mounting the separate, figural plaque of Dionysos in what is possibly its original location on a tripod leg.

The plaque arrived for the exhibition adhered to an unstable backing which presented a challenge for safe display.

The desired display location for the Dionysos figure on one of the wooden tripod legs.
Condition of the Dionysos Figure

Examination showed the ivory relief was inconsistently adhered to a modern backing of fabric, cork, and Plexiglas. Due to its irregular shape, the relief was largely unsupported.

Adding to the challenge of safe display, the charred ivory was inherently fragile and reassembled from multiple fragments, however, Jessie determined the existing joins to be stable.
Removal of the Modern Backing

Though the ivory relief itself was stable, in collaboration with conservators at Herculaneum the decision was made to remove it from the modern backing and create a new support system.

Jessie used acetone to soften the minimal areas of adhesive between the relief and backing material. A Mylar barrier protected the joins of the relief from being affected by the solvent.

Mylar sheet under the object during backing removal.
New Backing System for Dionysos

The requirements for the new backing included providing consistent support behind the entire relief, while being minimally-invasive and easily reversible.

On the back of the object, a Japanese paper backing was applied with methylcellulose. Tyvek tabs were adhered with Paraloid-B72. For reversibility, these tabs were designed to wrap around and adhere to an interface.

An interface of EV-Roberts epoxy was cast to support the uneven and curved back of the object.

Plexiglas was shaped and tapped for attachment via screws to the Tripod's mount.
Multiple Layers of the new Backing System

This drawing shows a side view of the planned backing system.
Toning the Backing System

The epoxy interface and the Plexiglas backing were covered with Japanese paper and toned with acrylic paint to match the wood of the tripod.
Attaching the Ivory Relief to the New Backing

Using B-72 on the Tyvek tabs, the object was attached to the epoxy interface.

The object/interface package was adhered with B-72 to the Plexiglas backing.

The Tyvek tabs were toned to match.
Mounting the Dionysos Relief

In preparation for attaching the Dionysos relief and its backing system onto the tripod leg, a painted acrylic mount was installed on the upper portion of the leg with three removable, telescoping clips. These clips were secured by set screws.

The Dionysos relief was then fastened to this acrylic mount in discreet locations using small machine screws through the Plexiglas surface of the conservation backing. The screw heads were obscured with toned Japanese paper.
Final Installation of Ivory Tripod

These images show the Ivory Tripod installed in the gallery.

The entire mount was bolted to the display surface using machine screws which were then hidden by painted Mylar circles.
We would like to thank Parco Archeologico di Ercolano for the wonderful opportunity to collaborate with them on this project and hope that this work will contribute to a greater awareness of the importance of this site. We look forward to working together again in the future.

Thank you Kenneth Lapatin and Antiquities Conservation colleagues.

Parco Archeologico di Ercolano https://ercolano.beniculturali.it/

Richard Hards rhards@getty.edu  Jessie Arista jarista@getty.edu