

Recent Advances in Barkcloth Conservation and Technical Analysis

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Barkcloth on Display: The *Discovering Worlds* Project at the Royal Albert Memorial Museum

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Introduction

The designated Ethnographic Collection at the Royal Albert Memorial Museum (RAMM) is displayed over two galleries: the World Cultures Gallery, containing objects from the Pacific, Africa and Asia, and the Americas Gallery. From 2007 to 2011 RAMM underwent a major Heritage Lottery funded refurbishment which included extensive work to the building to add new temporary exhibition spaces and reveal more of the original Victorian architectural features, as well as to develop and install brand new displays. Unfortunately, funding did not extend to include work on the World Cultures and the Americas Galleries. This was not deemed necessary at the time as the galleries had been updated between 1996 and 1999. However, when the museum opened to the public again in 2011 the two ethnographic galleries looked slightly old fashioned and disconnected, in terms of design and display, from the rest of the freshly refurbished museum. Problems with lighting and ventilation added to the need for a redevelopment of these galleries and in 2014 funding from the Designation Development Fund was secured to start work on the World Cultures Gallery.

The first focus of the project was the re-display of the Pacific collection. New research carried out as part of the project informed a re-interpretation of the displays and enabled the conservation and display of previously unseen objects from the store. In 2016-2017 the second stage of the project was implemented with funding from the Designation Development Fund and a Wolfson Foundation grant. It entailed not only the refurbishment of the African display cases, but also an updated ventilation system, new track lighting and two new cases in the gallery. The project was completed with the refurbishment of the Asian displays in 2018.

This article gives an overview of the observations made during the refurbishment of the Pacific displays with a focus on barkcloth objects, including a brief description of the conservation work, an evaluation of the techniques and materials used for the old displays and the changes made to the new displays.

Conservation of barkcloth objects from the Pacific

The conservation of over 250 objects selected for the re-display of the Pacific collection started in the summer of 2015. Only a comparatively small number of barkcloth artefacts was chosen, but they were very varied examples of how barkcloth has been used in the making of garments and objects. Selected for display were several flat pieces, ranging from small samples to one large painted barkcloth and three-dimensional items such as garments, masks, and a Tahitian Chief Mourner's costume. Both original pieces collected during voyages to the Pacific in the 19th century and new, contemporary examples of barkcloth making had been selected for display and were complemented by barkcloth beaters and pattern stamps. Not all objects needed conservation treatment as some had been worked on in the past or were in very good condition. The following three objects exemplify the problems encountered and the conservation treatments carried out.

Barkcloth from the Cook Islands

The largest barkcloth object chosen for display was a presentation piece, measuring 5 metres by 1.75 metres with a cream ground and a painted black decoration depicting three millipede- or lizard-like creatures in a field of triangles, surrounded by a border of geometric patterns. The barkcloth dates from the middle of the 19th century and beater marks are clearly visible on the back. Although rare, similar items can be found in the collection of the Royal Botanic Gardens, Kew and the British Museum. The barkcloth was in good condition apart from a few creases, and minor holes and tears along the edges. The main problem was an old mounting system consisting of a long calico strip, to which Velcro fastening tape had originally been stitched, that had been adhered to the back of the long side of the barkcloth, possibly during a loan to the United States in the late 1970s (Figure 1). Fortunately, the barkcloth fibres did not show any discolouration or damage in the area where the mounting system had been adhered and the adhesive itself had barely deteriorated. The main goal of the conservation treatment was the complete removal of the old hanging system, as less interventive mounting is now preferred at RAMM, for example with rare earth magnets or on rollers. In addition, it was likely that the deterioration of the adhesive would eventually cause damage to the barkcloth fibre.



Figure 1. Old mounting system adhered to barkcloth. Image Sarah Klopf © RAMM.

In 2005 research had been carried out into the date of the mounting system and the adhesive used. Unfortunately, the adhesive could not be identified and solvent tests to remove the hanging system were not successful and so only the Velcro was removed at this point, leaving a strip of doubled calico adhered to the barkcloth. In 2015 further solvent tests were conducted, once again with inconclusive results. None of the tested solvents, (acetone, white spirit, Industrial Denatured Alcohol (IDA)), completely dissolved the adhesive and time restrictions prevented extended testing. The use of IDA seemed at least to cause the structural breakdown of the adhesive into small granular pieces. For the conservation treatment the top layer of the calico was removed first by cutting it away, leaving only one layer of fabric adhered to the

barkcloth. Then a sandwich method was used directly on the fabric to release the adhesive, with IDA on blotting paper between Melinex® and spider tissue¹ as a barrier layer. After 30 minutes of exposure to the IDA vapours, the fabric could be peeled off the barkcloth easily without causing damage to the fibre. The majority of the granular adhesive residue could be brushed off with a soft brush.

Because of the size of the barkcloth the removal of the old hanging system had to be carried out in stages: unrolling a length of barkcloth from one roller, removing the adhered fabric and rolling up the treated areas on a second roller. The disadvantage of this treatment was that not all the adhesive residue could be removed from the barkcloth. Small granular pieces stayed on the surface of the fibre and tests to remove the remaining adhesive with a brush moistened with IDA or the same sandwich method proved extremely time consuming. As the re-display project had tight deadlines, it was considered necessary and acceptable to leave some of the adhesive residue on the surface of the barkcloth. The remaining adhesive was primarily on the surface rather than within the barkcloth fibres, minimising the risk of structural damage. The unidentified adhesive had also shown good aging properties since the 1970s, particularly as this period included time on display. However, the treatment of the barkcloth will need to be revisited in the near future.

During the removal of the old hanging system some of the worst creases in the barkcloth were humidified using a sandwich method of Sympatex®, moistened blotting paper and Melinex®. The more fragile holes and tears were backed with Japanese Sekishu Tsuru paper adhered with 2% methylcellulose in de-ionised water.

Samoan dress

One of the garments chosen for display was a Samoan dress with shoulder straps made out of two different types of red barkcloth with rubbed and painted geometric decoration. It has cut, scalloped edges on the hem and straps and probably dates from the 19th century (Figure 2). Overall the dress was in fair condition with particulate dust all over the surface and areas where the ingrained dirt made the surface appear almost grey. It also had many holes and tears, and in places the barkcloth fabric was delaminating into separate layers. One of the straps was torn and had been tied together to keep the strap intact, and there was a stitched repair in the same area. More old crude, stitched repairs in an undyed thread could be found in two areas at the hemline. One more modern repair with Japanese tissue paper had been adhered to a torn area on the inside of the intact strap where it was sewn to the dress. Due to poor storage in the past, the dress was very creased with much of the hemline folded over.

The aim of the conservation treatment was to stabilise the damaged and vulnerable areas of the barkcloth and to reinstate the original appearance of the dress as far as possible. It entailed cleaning the dress with low vacuum suction, through nylon net laid over the surface, which improved the appearance dramatically.

¹ Light weight acid-free tissue.



Figure 2. The barkcloth dress before conservation (left) and on the right, after conservation, mounted for display. Images Sarah Klopf © RAMM.

The hemline and major creases were humidified with a sandwich method using moistened blotting paper between Sympatex® and Melinex® and then carefully straightened and weighted with glass weights. Vulnerable and obtrusive holes and tears were backed with tinted Japanese Tengujo paper adhered with 2% methylcellulose to stabilise the barkcloth fabric and to enable it to withstand handling and display. The delaminated areas were re-adhered with methylcellulose for the same reason. The old Japanese tissue repair on the intact strap was carefully removed and replaced with a new tinted Japanese tissue paper backing. The torn and knotted strap was carefully opened out and then humidified to flatten the extremely creased barkcloth, restoring its original shape. After the torn ends had been dried and weighted it became clear that a section of the strap was missing and that the torn edges were quite vulnerable. To stabilise the fragile torn edges of the strap, a backing of tinted Japanese Sekishu Tsuru paper was adhered with 2% methylcellulose to either side of the tear. The two backing pieces were shaped and extended to form a replacement for the missing section. To facilitate mounting, the two backed ends of the strap were adhered after the dress had been put on its display mannequin (Figure 2).

Mask

An example of the more three-dimensional barkcloth objects chosen for display was an unfinished mask, circa 19th century, from New Ireland. It consists of a carved wooden face piece and an attached cap made from braided plant leaves and coarse barkcloth. The cap would have been further decorated with materials such as plant fibre and shell and the whole mask would have been painted. The plant fibre and barkcloth of the cap were very brittle and the barkcloth was actively shedding fibres when handled. The barkcloth was also torn in

several areas and had become detached from one side of the wooden face piece. The whole structure of the cap was slightly misshapen and crumpled, making it difficult to interpret.

In 2002 conservation cleaning had been carried out and a soft mount made for the inside of the cap, for a temporary exhibition. The mount consisted of a padded Ethafoam core covered in calico, and this was used to store the object after the exhibition. However it was slightly too small and did not support the fragile barkcloth and plant fibre structure adequately. The conservation treatment focused on opening out the cap a little further to help with its interpretation and to stabilise the fragile barkcloth. The cap was humidified with an ultrasonic humidifier and gradually opened out, first with the help of sand weights and then with a slightly larger Ethafoam shape inserted into the cap. The re-shaping was kept to a minimum because of the fragile nature of the barkcloth and plant fibre. After the cap had acclimatised to its new shape, the torn areas of the barkcloth were backed with Japanese tissue paper, tinted with acrylic paints and adhered with methylcellulose. The tissue backing was then used to re-attach the barkcloth to the wooden part of the mask.

Barkcloth on display

Previous Pacific displays

The previous displays in the World Cultures gallery were the result of an early Heritage Lottery funded refurbishment, spanning the period from 1996 to 1999. During this project the old suspended ceiling was removed and the entire gallery stripped back to its original Victorian architecture. The gallery was fitted with new and bespoke display cases (Figure 3) with a small hut area in the middle of the gallery for children's activities. The cases were the first big museum commission for The Benbow Group and were constructed to exact specifications from the conservation team. The cases have powder-coated, stainless steel frames, fitted with 11 mm laminated glass and are extremely well sealed, exceeding the specified air exchange of only 0.1 per day.² All internal case materials were submitted for Oddy Testing. Of the several wood samples suggested, alder-faced blockboard performed best and was chosen for the inside of the cases. It was specified that the boards should be completely sealed with Moistop® before installation to prevent any off-gassing inside the cases. However when object installation had already begun, it was discovered that only the front of the backboards had been sealed. The deadline for completion of the project left no time to take the backboards out and completely seal them.

Fibre optic lighting was considered for the display cases, but at the time the development of this type of case lighting was relatively new and too expensive for the available project budget. Instead RAMM's in-house designer, together with a specialist lighting contractor, developed a bespoke lighting system, fitting the cases with very slim fluorescent tubes. This was regarded as cutting-edge technology at the time. The system was installed on the sloped tops of the cases and delivered a fairly 'flat' lighting scheme, allowing overall levels to be maintained at 50 lux or below. All light tubes were covered with UV filter sleeves. For ambient lighting up-lights were fitted along the walls above the cases and positioned to enhance the fan-light architecture.

² A selection of cases tested at the time were less than 0.01 air exchange per day.



Figure 3. One of the cases showing the previous Pacific displays. (© RAMM).

Only Oddy tested conservation grade materials were used for the installation of the objects in the cases. Soft mounts were constructed from Ethafoam or Plastazote® (polyethylene foam) with polyester wadding or felt and covered in scoured calico, cotton stockinette or domette. Objects were mounted with brass mounts on alder-faced blockboard plinths, sealed with Moistop® and covered with calico. To improve the environmental conditions in the gallery a low impact approach was chosen, as few museum objects were on open display and the extremely well-sealed cases protected the objects inside from environmental fluctuations. An extraction system, rather than a full ventilation system, was installed in the new roof space. This reduced the high temperatures in the gallery during the summer by extracting hot air from the roof space at night.

This display remained in the gallery for a total of 12 years with only minor changes to the objects in the cases. During the 2007-2011 redevelopment of the museum the two ethnographic galleries were sealed off from the rest of the museum, then a major building site, to prevent the ingress of dust and building debris. All objects were taken off display and put back into storage. For the re-opening of the museum in 2011 the galleries were deep cleaned and the former display re-installed with only minor adjustments.

Observations during de-installation of the old display

As the previous display of the Pacific collection had been created to the highest conservation standards wherever possible, the de-installation of these displays was a great opportunity to observe how certain materials and methods had performed. The issue with the half-sealed alder-faced backboards in the cases was not resolved until the *Discovering Worlds* project started in 2015. Other projects had a higher priority and there was neither funding nor enough resources to justify the complete de-installation of the objects and strip-out of the cases. The

objects on display were monitored over the years for signs of deterioration due to pollutants from the blockboard. During the entire display period of 12 years only two objects had to be removed from the cases. One was a shell necklace that showed signs of Byne's disease³ and the other an African glass bead necklace where the glass beads were actively deteriorating. There was also an acidic smell inside the cases whenever they were opened. The only sign that other objects could have been adversely affected was a general embrittlement of most plant fibre artefacts when they were taken off display in 2015. However, this could also be damage that had occurred prior to display or be connected to light exposure which would have accelerated the general ageing of the plant fibre material.

The main conservation issue observed during the de-installation of the cases was light exposure. When objects were removed from their calico-covered mounts, a faint outline of the object often remained on the calico, indicating that objects and mounts had received significant exposure (Figure 4). Yet it was difficult to judge how much damage had been caused to the objects. Resources had not allowed for blue wool monitoring. Most of the items had probably already suffered light damage before they were installed during the 1990s redevelopment and there did not appear to be a big colour difference between exposed and non-exposed parts of the objects. However, when other parts of the World Cultures gallery were refurbished at a later stage and objects taken off display, clear signs of light damage could be identified. The damage tended to be worse the closer the object was to the lights at the top of the case.

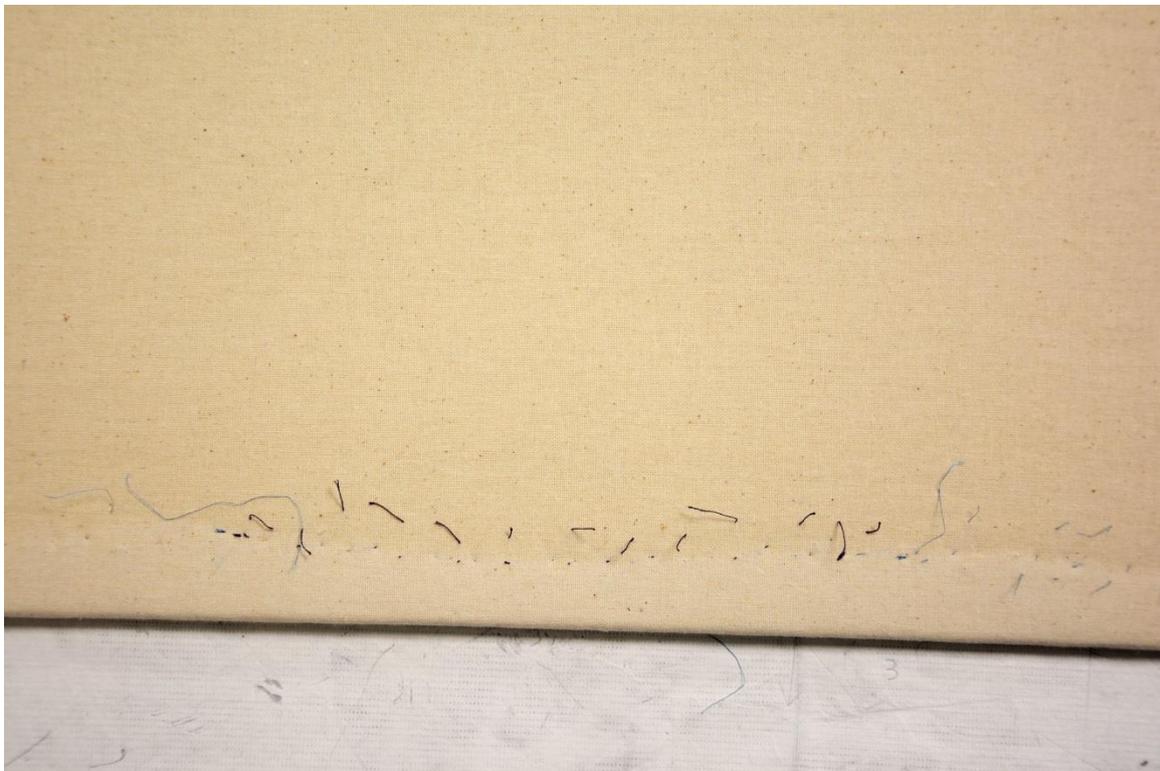


Figure 4. Light damage visible on calico mount after object had been removed. Image Sarah Klopf © RAMM.

³ Deterioration of the shell due to chemical reaction with acids.

This shows that even at 50 lux, cumulative light damage had occurred. As the case lighting could not be regulated, most of the objects had been exposed to light from 9am to 5pm for six to seven days a week for over 12 years. Moreover, most of the fluorescent tubes had lost their UV sleeves over the years, probably during the changeover of broken tubes. Problems also arose with the ambient lighting in the gallery. Due to ageing technology and an old wiring system, it became more and more difficult to maintain the lights and obtain replacement parts. By 2015 many of the up-lights did not work, making the World Cultures Gallery extremely dark.

All the materials used for mounts inside the cases had performed very well, although in some cases metal mounts were in direct contact with the objects. The mounts also appeared less elegant and accomplished than those in the rest of the museum. Brass is a softer metal than, for example, stainless steel, and this meant that thicker rods and wires had been used. Some objects were also installed with just a soft mount leaving heavier parts unsupported, either making the object tilt or putting other parts of the object under strain.

The extraction system installed in the 1990s had been de-commissioned during the main museum re-development as there had been many complaints about the noise from the system running overnight during the summer. This meant that the gallery was again very hot during the summer months and after the museum re-opened in 2011 visitors complained on a regular basis about the temperatures in the gallery. The high temperatures also had an adverse effect on the adjacent, fully conditioned galleries making it very difficult for the system to achieve a stable environment, since doors between galleries had to be kept open.

New display

General display changes

For the new Pacific displays (seen in Figures 5 and 6), only the case interiors and the case lighting were refurbished, but as part of the second stage of the *Discovering Worlds* project a new ventilation system, two new bespoke Benbow cases and a new track lighting system were also installed. The new intelligent ventilation system that was fitted in the roof space actively monitors the air in the gallery and either introduces fresh, filtered air or extracts hot air as needed to reduce overheating in the gallery and to improve conditions for visitors.

For the new case lighting a combination of LED fibre optic spot-lights and LED strips were chosen, to give both focused and ambient lighting. They were mounted in bespoke wooden hoods on top of the cases, designed and constructed by RAMM's in-house technical team. All lights are dimmable and do not exceed the recommended 50 lux. The suspended Euro track lighting also has dimmable LED lights and was installed to give ambient lighting in the gallery walkways and additional case lighting, again not exceeding 50 lux. The cases were completely stripped for the re-display and all alder-faced blockboards re-sealed with aluminium tape. The boards were then covered with the Oddy tested Creation Baumann display fabric Ultra V. Plinths were made from zero formaldehyde medium density fibre board, sealed with aluminium tape and also covered with Creation Baumann fabric.

The mounting of museum objects had changed considerably since the refurbishment of the ethnographic galleries in the 1990s. This was due to the major museum redevelopment between 2007 and 2011 which gave the in-house technical team the opportunity to gain more experience and develop new and more streamlined mounting techniques. One of the main changes was from brass to stainless steel for metal mounts. As stainless steel is stronger and more durable than brass, thinner rods and wires could be used, allowing more elegant and

invisible mounts. Where the metal mount is in direct contact with the object the metal wires are covered with heat-shrink tubing to avoid potential damage to the object. The heat-shrink tubing can be painted with acrylic paint making the mount almost invisible.



Figure 5. New Pacific displays with Tahitian Chief Mourner's Costume in its own case. Image Matt Austin © RAMM.



Figure 6. New Pacific displays showing examples of some of the barkcloth mounts. Image Matt Austin © RAMM.

Mounting of barkcloth objects

A variety of techniques was implemented to mount the barkcloth objects selected for display. Most of the techniques were common conservation mounting methods, well established at RAMM. Three-dimensional garments, like the Samoan barkcloth dress, were mounted on Proportion mannequins⁴ and supported with bespoke underpinnings. If a very specific shape was needed, a padded Ethafoam core was used instead. Most of the flat barkcloth pieces were attached to backboards or plinths with painted rare earth magnets, using an isolation layer of Melinex®. Not all objects had new mounts made. A few items which had already been on display since the 1990s refurbishment of the gallery were left on their old brass and soft mounts. It was deemed too stressful and intrusive for the objects to be removed from their old mounts and as only conservation grade materials had been used, it was not necessary to put the objects through this process.

Three mounting techniques are worth discussing in more depth as the way these mounts were produced had changed since the 1990s redevelopment of the World Cultures gallery.

Roller mounts

This mounting technique was used for big, flat textiles like the presentation piece from the Cook Islands or fairly flat garments like a *tiputa* (a type of poncho). Roller mounting had already been used in the previous display. This had consisted of flexible Ethafoam rollers reinforced with wooden rods to give them the necessary rigidity and strength to hold a big barkcloth. The foam roller was often cut along one side and mounted onto the sealed wooden rod, sometimes padded with Polyester wadding and then covered with calico. This made the roller fairly heavy and the construction time-consuming. Moreover, the brass brackets used to mount this type of roller had to be very substantial to allow for the weight of the roller and the softness of the metal.

For the new display, acid-free cardboard rollers were used instead. The cardboard is rigid enough to hold most barkcloth objects and comes in different diameters, so that an internal support structure is not necessary. The roller was cut to size, padded with one layer of polyester felt and covered with Baumann display fabric. The ends of the rollers were filled with Ethafoam plugs to stabilise them for mounting and covered with an acid-free card mount board disc, wrapped in display fabric, to give a neat finish. Depending on the size of the roller and the weight of the object, the rollers were then either mounted with bent stainless steel wire mounts or wooden brackets. If a roller was installed with wooden brackets, the Ethafoam plug and end caps were not necessary. Garments were often draped over the roller without any stitching, as the weight of the object and the friction of the display fabric were enough to hold them in place. Because of its size the barkcloth from the Cook Islands was rolled onto the display roller with one end left hanging loose for display (Figure 7).

⁴ Calico covered papier-maché bust form from Workroom Collection.

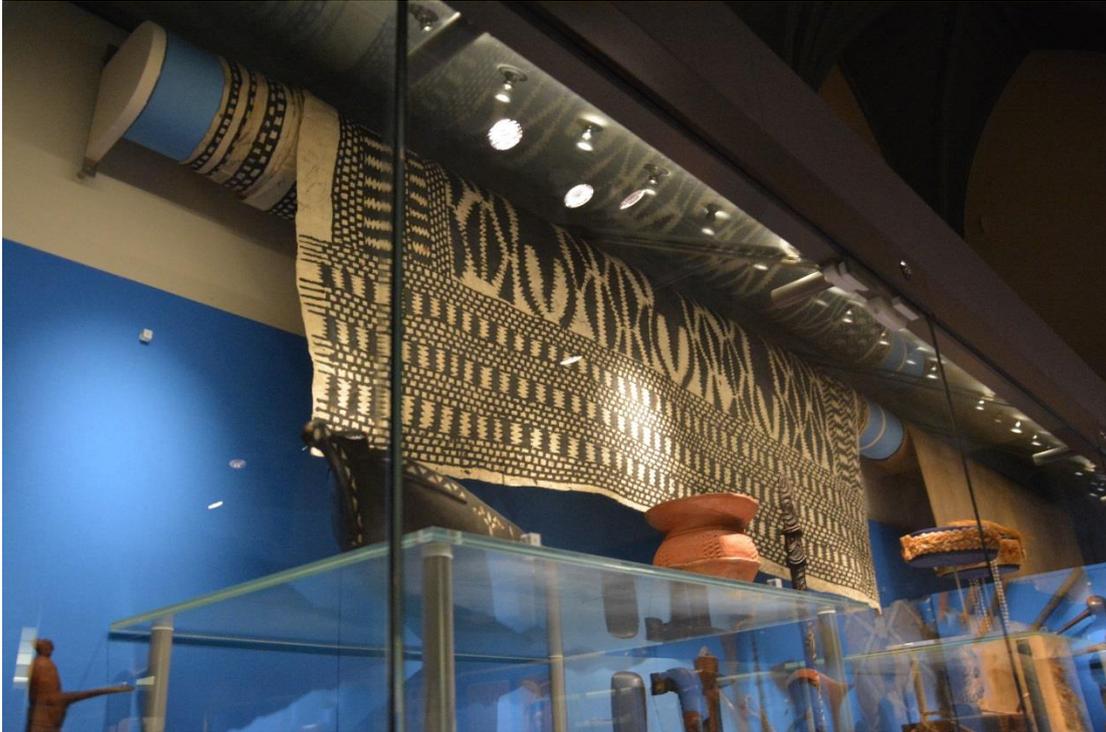


Figure 7. Large barkcloth installed on cardboard roller with wooden brackets. Image Sarah Klopf © RAMM.



Figure 8. Mask installed with a combination of soft and metal mount. Image Sarah Klopf © RAMM.

Combination mounts

Three-dimensional objects that were made of soft and vulnerable barkcloth and heavier wooden parts, like the mask from New Ireland, were mounted on a combination of soft and metal mounts (Figure 8). This type of mount had been perfected during the 2007-2011 museum refurbishment. These sophisticated mounts could be tailored exactly to the conservation needs of an object. The New Ireland mask, for example, needed a soft mount to support the vulnerable barkcloth and plant fibre cap for display. This was made from an Ethafoam core,⁵ covered with polyester wadding and Baumann display fabric. For a neat finish a card mount-board base, covered with the display fabric, was sewn to the Ethafoam soft mount. However this soft mount would not have provided sufficient support for long-term display. The weight of the unsupported wooden face piece would have pulled on the fragile barkcloth and plant fibre cap, potentially causing damage to the areas where the cap was attached to the mask. Therefore an additional metal mount was created and attached to the soft mount to support the wooden face piece.

Tahitian Chief Mourner's Costume

The re-display of the Pacific collection was also a great opportunity to revisit the complex mount of the Tahitian Chief Mourner's Costume. A bespoke brass mount with wooden components had been created for the 1990s refurbishment of the gallery, but as the full-height costume did not fit into the allocated case, a mount had been created for a more condensed version of the costume. For the new display, the costume was moved to its own island case and could now be mounted at its full height and to more human proportions. The core of the mount was a Proportion mannequin with an attached Proportion mannequin head and short handmade arms, made from polyester wadding, acid-free card and calico. The mannequin was mounted onto a powder-coated stainless steel stand.

The core mount held most of the barkcloth garments, including the headdress, and also an undergarment made of Reemay® and acrylic paint, that was added to give the costume a more complete appearance and more accurate silhouette. Stainless steel mounts were then inserted into the mannequin and mannequin head to hold the face mask, breastplate and shell apron in place (Figure 9). Creating a new bespoke mount for the costume also had the advantage that the arrangement of the different parts of the costume could be revised. Research on other Tahitian Chief Mourner's costumes, notably by Jeremy Uden at the Pitt Rivers Museum (Uden et al. 2016), had provided new information about how the costume was worn, for example, with the cape worn up and over the hat and secured with a hibiscus fibre cord.⁶

Conclusion

The redisplay of the Pacific collection provided a great opportunity to revisit and evaluate display techniques for barkcloth objects at RAMM. The old display from the 1990s had been created to the highest conservation standards wherever possible. Overall the display cases and materials used for mounting the barkcloth objects had performed very well. However damage to objects on display due to long-term light exposure was evident and the only partially sealed wooden backboards in the cases had also been problematic, although damage to objects was less obvious.

⁵ The same shape that had been used to humidify the cap was used for the mount.

⁶ Personal communication with Jeremy Uden, Pitt Rivers Museum.



Figure 9. Installation of the Tahitian Mourner's Costume on its new mount. Image Sarah Klopf © RAMM.

For the new displays, well-established techniques used in the previous displays were re-used and problems like the unsealed backboards rectified. Best efforts were made to minimise cumulative light damage by using the latest LED case lighting technology and keeping the galleries completely dark when the museum is closed to the public. New and improved mounting techniques helped to give the displays a high-quality finish and to visually tie the World Cultures gallery in with the rest of the refurbished museum. It is also important to mention that having exhibition design, technical support and conservation all under one roof made a huge difference to the re-display of the World Cultures Gallery. Every step of the refurbishment process was informed by the expertise of the different departments with the conservation needs of the objects always being the highest priority.

References

Uden, J., Richardson, H.M. and Lee, R.E. 2016. The Conservation and Display of the Tahitian Mourner's Costume at the Pitt Rivers Museum, University of Oxford. In: M.M. Brooks and D.D. Eastop, eds. *Refashioning and Redress: Conserving and Displaying Dress*. Los Angeles: Getty Conservation Institute, 93-106.

Suppliers

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Author biography

Sarah Klopf graduated in 2011 from the University of Applied Science in Erfurt, Germany, in the conservation and restoration of archaeological objects and decorative arts. After graduating she spent a month with the Staffordshire Hoard Conservation Project on a placement, before working at the Royal Albert Memorial Museum in Exeter as a conservator on a casual hour contract and as a member of the Visitor Services Team for a year. In 2012 she became archaeological project conservator at the *Landesamt für Denkmalpflege, Baden-Württemberg* in Esslingen, Germany, where she treated archaeological grave goods from the excavation of an early medieval burial site near Lauchheim, Germany. In 2013 she returned to the Royal Albert Memorial Museum in Exeter as an object conservator.