TREAD ON ME!

STRUCTURAL STABILIZATION WITH VISUAL INTEGRATION OF HOOKED RUGS: A TECHNIQUE FOR FILLING LOST PILE

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HISTORIC® NEW ENGLAND
Defining the past. Shaping the future.

View of East Gardens of the Beauport-McCann House, 2011

Image by Joel Black.

Henry Davis Sleeper, undated image.

The Strawberry Hill Bedroom c. 1940 – 1950

Images courtesy of Historic New England.

Octagon Room

South Gallery

Introduction

Historic New England preserves numerous handmade rugs within their original context in the Beauport, Sleeper-McCann House in Gloucester, Massachusetts. These rugs are an important element of the interiors designed and installed by Henry Davis Sleeper (1878 – 1934). Sleeper, a noted decorator of the early 20th century, was an influential contemporary of Boston's Isabella Stewart Gardner and Delaware's Henry Francis DuPont.

The complex restoration history of this collection, maintaining its role in Sleeper's interior décor, and the requirements for minimizing treatment time & material cost for a large collection were influential in the development of the treatment technique described in this poster.

Project Scope

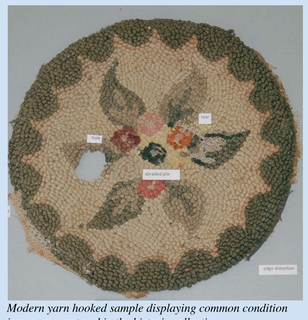
This treatment was developed for damaged rugs that are actively losing pile. It was designed to meet three specific objectives: to create even surfaces to minimize trip hazards and to insure visitor safety; to stabilize rug components to avoid additional losses; and to reduce damage while reproduction options are implemented.

Production and installation of rug pads, specified & designed by consulting textile conservator Deirdre Windsor, serve to reduce compression damage to the rug structures while they are on display. The use of polyester felt fills to replace missing pile minimizes the risk of visitors tripping and potentially tearing rugs.

Condition Issues

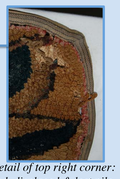
Hooked rugs are named for their construction method. Using a hand held hook, strips of fabric are pulled through loosely woven substrates from the bottom to form a set of close packed loops on the top surface. The color and massing of the loops are used to form intricate geometric, floral, or pictorial designs. Unfortunately this construction makes these rugs vulnerable to damage. Many of the rug substrates are woven jute that have weakened and torn, releasing the pile loops and resulting in the loss of the design area of the rug.

Faded
Soiling
Tears
Holes
Abraded pile
Abraded edges
Distortion
Folds/creases



Modern yarn hooked sample displaying common condition issues encountered in the historic collection.

1942.2593. Gift of Constance McCann Betts, Helena Woolworth Guest and Frasier W. McCann.
Hooked rug (1850 – 1874), L. 88.25 x W. 40 in. South Gallery
Pile: wool; knit, 2/1 twill, and plain weaves.
Substrate: bast (possibly jute) plain weave, undetermined thread count.



Detail of top right corner: torn ground, displaced & lost pile.

1942.1773. Gift of Constance McCann Betts, Helena Woolworth Guest and Frasier W. McCann.
Hooked rug (1850 - 1899), L. 67.875 x W. 34.75 in. Octagon Room.
Pile: wool; 2/1 twill and plain weaves. Substrate: bast (possibly jute) plain weave, full selvedge to selvedge width.

Detail of hole in bottom right corner.

Previous Repair

Rugs in the collection have been subject to past repair campaigns that have introduced edge bindings and unsupported stitched repairs. These methods have included restoration techniques that removed original material in order to facilitate introducing new patches of hooked wool pile. Generally, these repairs are left undisturbed to minimize treatment intervention and to retain historic evidence.

1942.2593. Gift of Constance McCann Betts, Helena Woolworth Guest and Frasier W. McCann.
Hooked rug (1850 – 1874), L. 84.5 x W. 81.75 in. Strawberry Hill Bedroom. Pile: 2/1 twill, and plain weave wool fabrics. Substrate: bast (possibly jute) plain weave, undetermined thread count.

The technique

Durafelt, a needle-felted polyester felt, was selected because:
- nonwoven structure mimics the worn & abraded pile
- cut edges don't require finishing
- available in many durable colors
- colors are integrated in its molten state, before the fibers are extruded
- stable & inert

First, tears and holes are bridged with a grey plain weave cotton backing. The weave direction is aligned with the weave directions of the rug substrate. The uniform color signals to later conservators that the component parts are part of a stabilization campaign.

Two approaches to filling were developed to suit the diverse pile topographies present in the collection.

Method One:
For rugs with some depth of pile, a felt plug formed using the hooked rug technique worked best.

Strips of polyester felt are hooked into a substrate of Monk's cloth, an open, balanced plain weave with quadrupled cotton warps and wefts.

The hooked fill is checked for loop size, depth & massing.

Although Durafelt comes in a variety of colors, PROfab textile paints can be used to replicate colors in the design.

The toned hooked felt plug in position.

Method Two:
For rugs with pile that is significantly abraded and/or compressed, layers of felt, shaped to the area of loss, are used to fill and plug the area.

Stabilization of the hole is complete. An intermediate layer using a plain weave cotton fabric, similar in color to the lost design element is shown.

The loss is traced on mylar. Lines indicate color transitions in the pile.

Two layers of felt were shaped and placed into the loss.

PROfab textile paints were used to replicate areas of loss design.

The fill is stitched along the painted shapes to recreate some of the pile texture and to attach it to the support fabric

The toned, shaped felt plug in position.

Observations & Conclusion

• During the recommended heat curing PROfab textile paints can darken, shifting the colors. This can complicate color matching.

• The polyester felt market is shifting toward 100% recycled content, making virgin polyester harder to find. Frequently as part of the recycling process adulterants are introduced to materials, whose ageing properties are unknown or unpredictable. For polyester, the preferred recycling method uses mechanical shredding and re-melting of the polyester rather than chemical digestion. Sample colors of recycled and virgin content Durafelt passed preliminary Oddy testing. This suggests that Durafelt uses mechanically processed polyester sources.

• The technique presented in this poster adapts elements of a documented restoration technique, re-hooking lost design elements, to conform to conservation practices in both material use and implementation.

1942.1773 after treatment.

Future Work

• Develop a fill technique for areas where pile is gone but substrate remains.

•The treatment approach described above is part of a larger project that concerns the overall preservation of hooked rugs within the Historic New England collections. In tandem with treatment, Historic New England staff are active in:
- surveying rug conditions & producing rug pads to protect them
- reviewing & improving preventive care performed by site staff
- planning & creating adequate housing for hooked rugs in storage
- insuring all visitors to Historic New England properties wear shoe covers to protect floor surfaces & coverings.

Modern yarn hooked sample after filling.

Material Sources

Durafelt 11 oz needle-felted polyester felt
Available in 45 colors, 72" width
from Central Shippee, Inc.
46 Star Lake Rd., Bloomingdale NJ 07403
Tel. (800) 631 – 8968 Fax. (973) 838 – 8273
www.thefeltpeople.com

PROfab Textile Paints
Available as a sampler paint kit containing 7 colors, 1 oz size from PROChemical & Dye
P.O. Box 14, Somerset MA 02726
Tel. (800) 228 – 9393 Fax. (508) 676 – 3980
www.prochemical.com

Monk's cloth, plain weave cottons, crochet hook
Available at most craft stores. All fabrics were washed before use to remove finishes and to pre-shrink.

Acknowledgements

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Congdon, A. R. 1922. The repair of hooked rugs. *The Magazine Antiques*. 2(August): 68 – 70. The article documents a restoration technique that was likely used to repair portions of the HNE collection judging from evidence.

Greenbaum, H. and D. Rubinstein. 2011. Who Made That? (Fleece). *New York Times Magazine* (November 27): 28. The authors describe how recycled plastic bottles become polyester fiber.

Robinet, L. and D. Thickett. 2003. A New Methodology for Accelerated Corrosion Testing. *Studies in Conservation*. 48(4): 263 – 68. The authors describe how they modified the Oddy test to incorporate three metal coupons into a silicon stoppers to create a '3 in 1' test to detect harmful volatiles.

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