

Experimental Archaeology: Complex Weavers
Archaeological Textiles Study Group Project, January 2021
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Introduction and Inspiration:

Nancy Arthur Hoskins gave a presentation on ancient Egyptian textiles, “Ephemeral Textiles,” to the Portland Handweavers Guild in May 2019. Her hypothesis is that the fitted pattern dress worn by goddess was most likely woven, not beaded, as suggested by some Egyptologists. The dress is essentially a shift or sheath dress from just below the bust (or about where a bra band would be, exposing the breast) to the ankle. The dress has shoulder straps set at slight angles and appears to have little wearing ease.



Figure 1. Isis and Nefertari, mural from the tomb of Nefertari, New Kingdom (mural), Egyptian 19th Dynasty.

Nancy Hoskins had not woven the dress but, to support her theory that these were woven textiles, she had woven samples of many of the designs associated with these dresses which are seen in murals in Egyptian tombs. I decided to try to weave the dress for my 2020 Complex Weavers Archaeological Textiles Study Group project using her specifications, her book on weft-faced pattern weaving, and several of her articles in *Complex Weavers Journal*. I am very appreciative of her help and support in this effort.

Project Goal:

A garment for an ancient Egyptian might be about a petite size 2, or to fit a female about 5' tall with hips and bust of about 32-33". I opted for two panels to be seamed up the sides, and additional warp to weave the straps sideways.

Materials and Project Set-up:

Warp: 40/2 linen, doubled; threaded as a five-shaft point twill
Weft: 20/2 wool (Mora), tripled in red, yellow, and blue
Total Ends: 282 working ends (564 total ends) plus floating selvages
Sett: 8epi, 1 working end per dent (2 ends) in an 8-dent reed
Width in Reed: 35.25"; Warp Length: 4yds (3yds for dress plus 1yd waste)

Weaving:

The header was woven as plain weave with the doubled 40/2 linen. The main cloth was woven as a "five-picks-equals-one-pass" multi-color weft-faced cloth as described in (1). Red was the dominant color, with yellow and blue being secondary colors.

Finishing and Construction:

1. Each panel was cut from the loom and the warp ends were tied off with half-Damascus knots and the ends threaded through the weft "tunnels" with a tapestry needle to secure and protect the wefts.
2. Next, the two panels were steamed and allowed to completely dry on a flat surface.
3. The panels were abutted and seamed at the selvages with the 40/2 linen thrums.
4. The straps were similarly finished with half-Damascus knots and the warp ends pulled through the weft "tunnels" and then steamed and allowed to dry flat. Each was sewn onto the top edges of the dress at a slight angle as seen in the pictures of the ancient paintings.
5. Stress points were reinforced with a couple of whip stitches. Once the dress was completely sewn together, the entire piece was steam pressed again.

Lessons Learned and Ideas for Future Work:

1. The proportions of the breast and ankle bands to the body diamond motif seemed about right based on the picture of ancient painting of Nefertiri and Hathor. However, the straps could have been slightly wider.
2. Initially, I expected to finish the tops and bottoms of the panels and straps with hems woven in plain weave linen. But after noting the huge difference in the two weave structures, it became clear that the hems may not lay flat. I'd just finished a krokbragd rug with Damascus knots and burying the warp ends in the weft "tunnels" and thought that the edge created was neat and secure. Also, the long floats on the reverse of the dress fabric appeared to be too loose and fragile to support sewing a hem onto it (See Figure 3). Damascus knots seemed a bit big for this purpose, but the half-Damascus worked fine and was less obvious (See Figure 4).
3. The finished material using wool was quite heavy, but still wearable. I'd really like to see the difference using all linen (although linen tends not to dye well to get the

- bright colors of the dress as seen in the murals), or research what other fiber(s) might have been used that could be lighter and/or more flexible.
4. The panels lined up pretty well, with very little variation so that the motifs weren't distorted much along the side seam lines, but there were some places that required more work to coax the designs into alignment (See Figures 5a and 5b). Since the dress is a straight shift, weaving one wide panel with a single seam up the back would simultaneously assure the motifs would line up and eliminate the extra work associated with aligning and sewing two side seams.
 5. Although the work was time-consuming, it was actually pretty easy and could be accomplished with rudimentary equipment. One could use a ground or upright loom using pickup for weaving the cloth, and just scissors and a large tapestry needle for hiding the warp ends and sewing the seams. However, I did use a temple to avoid draw-in at the selvages.
 6. Initially, the straps using the same weave structure seemed too heavy. Finishing both sides of such a narrow textile using the half-Damascus knots and "tunneling" technique to bury the warp ends was tedious and made the straps a bit stiffer. As an alternative, I wove a strap sample on a band loom using the same 40/2 linen and 20/2 wool, but the warp peeked through just enough to change the saturated color, and the weight of the final strap was slightly lighter. Another option for further study might be to explore more deeply a warp-faced band weave for the straps to both get a sturdier strap with the strength along the linen warp over the shoulders while also avoiding the extra effort and bulk of finishing the sides of the straps. A "warpier" band could also deepen the color by completely covering the weft. The sample of the band on the loom is in Figure 6.
 7. Due to the pandemic, I had no model to try the dress on for fit. However, the finished dimensions – dress internal circumference of about 33" and length from under-bust to ankle of 34" – corresponds roughly to a Ladies' Petite size 2.
 8. The dress would have to be pulled over the head or up over the hips. The wearer would benefit from having help to put it on because the fabric is fairly stiff, but a lady of the Egyptian court would have had such assistance. It is unlikely that the dress was as fitted as depicted; to achieve such a form, the wearer would need to be sewn into the garment. It's very possible that line drawings of the figures were drawn first and then the colors and designs of the clothing filled in later.
 9. The final weight of the garment is about 3#, similar to a typical Northwest winter coat. The interior of the garment next to the skin is comfortable since the long floats are soft to the touch. If the garment were beaded, it would likely weigh more and need something like a lining between the beads and skin to feel more comfortable.
 10. If this dress really was woven in ancient Egypt, it would have been a garment worn for ritualistic rather than daily wear. Compared to plain weave linen, it uses up an extraordinary amount of fiber and would therefore be quite costly. It is heavier and therefore warmer, and doesn't seem to allow for much physical flexibility and freedom of movement through the hips and upper thigh for sitting or squatting. That said, there are paintings that show women in these dresses doing exactly that [see Figures 2 and 3 in reference (5)]. Although there doesn't appear to be any evidence

of a vent to facilitate movement, such a vent would not be visible if it were located in the back of the dress since all paintings seem to be front or side views. Again, a single panel seamed up the back might be a good solution.

References:

- (1) Hoskins, Nancy Arthur. Weft-Faced Pattern Weaves: Tabby to Taquete. Seattle: Skein Publications, in association with the University of Washington Press. 1992.
- (2) Hoskins, Nancy Arthur. "Fabric Patterns Found in Royal New Kingdom Tomb Paintings from Egypt: The Tomb of Tuthmosis IV." *Complex Weavers Journal*. June 2016. Number 111, pp. 17-26.
- (3) Hoskins, Nancy Arthur. "Fabric Patterns Found in Royal New Kingdom Tomb Paintings from the Eighteenth and Nineteenth Dynasties of Egypt." *Complex Weavers Journal*. October 2016. Number 112, pp. 17-27.
- (4) Hoskins, Nancy Arthur. "Fabric Patterns Found in Paintings from Egypt: The Tomb of Amenhotep III." *Complex Weavers Journal*. June 2017. Number 114, pp. 17-26.
- (5) Hoskins, Nancy Arthur. "Fabric Patterns Found in Royal New Kingdom Tomb Paintings from Egypt: The Tomb of Seti I." *Complex Weavers Journal*. October 2019. Number 115, pp. 33-38.
- (6) Hoskins, Nancy Arthur. "Fabric Patterns Found in Royal New Kingdom Paintings from Egypt: The Last Pharaohs of the Nineteenth Dynasty." *Complex Weavers Journal*. February 2019. Number 119, pp. 33-43.

Figures 2a and 2b: Design being woven on the loom

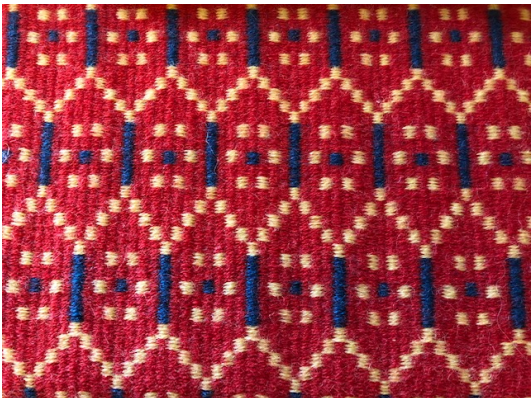


Figure 3: Back-side of design



Figure 4: Half Damascus knots



Figure 5a and 5b: Side seams to join panels

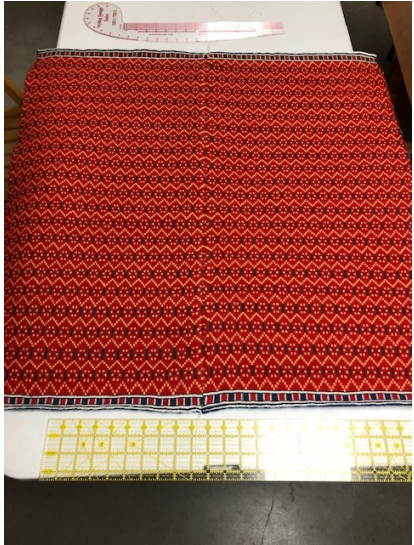


Figure 6: Sample of band-woven for strap



Figure 7. Completed dress

