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**Mannequins for Navajo Textile Display**  
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**POSTER ABSTRACT:**

A collaboration between Navajo weavers, textile conservators and exhibition designers led to the design of a mannequin that allowed 19th C. Navajo wearing blankets to be displayed on three dimensional forms showing them in a more accurate context than the usual two dimensional wall display. During the exhibition planning, three Navajo weaver co-curators were consulted regarding the mannequins. The weavers wanted the forms to be more abstract and not look too human, yet at the same time evoke common postures. The weavers did not want "lollipop" forms (torso- on-a-stick), nor should they look ghost-like with no substance inside. Silhouettes of figures were drawn following the guidance of co-curator and weaver Wesley Thomas. Seventeen designs were created, representing different poses, age, and gender.

Several of the poses required extended arms, leading to the need for structural foundation to support the weight of the textiles. The solution to this problem was found by constructing an internal armature of 1 1/2" PVC tubing. Using these ready-made materials greatly simplified the construction. No custom structures were needed; the plumbing industry had done all of the work by fabricating every possible angle joint that was required for to create shoulders, elbows and even bases. A support stand was designed that allowed the mannequins to be installed after the bases were secured to the exhibit deck. Additional benefits in using the PVC include the ease in cutting and joining, the fact that no new carpentry trades were learned or expensive tools were needed. The use of this type of armature could easily be adapted to other mannequin form materials.

The bulk of the mannequins were carved out of Ethafoam planks, and then were covered with 200 wt. beige color Polar-Fleece®<sup>1</sup>. The fleece provided enough padding to eliminate a layer of batting that is traditionally used. The seams were easily made by slicing a incision in the Ethafoam and pushing the fleece into it thus, only a minimal sewing was needed.

During test dressing of the mannequins, it was discovered that the textiles clung quite well to the fleece, adequately supporting the blankets and preventing slippage. No Velcro needed to be sewn to the textile or the mannequins; only a minimum of security stitching was used to attach the blankets during display.

**INTRODUCTION:**

An Ethafoam mannequin can be easily constructed with few tools and woodworking skills. This technique uses thick blanks of polyethylene foam in vertical orientation. An armature of PVC plastic tubing is position in the center.

**METHOD:**

A pattern for each form design is made. The pattern is placed on top of the Ethafoam plank, secured with T-pins. A scroll saw is used to cut the the Ethafoam. The saw was quick and easily made tight

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<sup>1</sup> Malden Mills, 46 Stafford, Lawrence, MA 01841

curves. The disadvantage was that the blade was not long enough to cut the entire thickness. Two cuts were needed, one on each side.

The scroll saw was also used to execute the initial rounding cuts. The blade could be adjusted at 30 - 45 degrees, for an even cut along all the edges. Precision was particularly good for the lower sections of the standing forms.

Further shaping of the forms was accomplished with an assortment of knives and an electric meat knife. A hand sander was used for additional smoothing.

Two thicknesses of 4" Ethafoam, were used for each form, both sitting and standing.

Several of the poses required extended arms, leading to the need for structural foundation to support the weight of the textiles. The solution to this problem was found by constructing an internal armature of 1 1/2" PVC tubing. Using these ready-made materials greatly simplified the construction. No custom structures are needed; the plumbing industry had done all of the work by fabricating every possible angle joint that is required for to create shoulders, elbows and even bases.

The armature for standing forms with arms was composed of a central post, with a "T" fitting to create the shoulders. Various angled fittings were used in order to achieve the the proper pose and position of the arms.

Screws are used in predrilled holes to secure each connection. This eliminates the need for any glues that might be harmful. The screws can also be removed to adjust the angle of the arms.

A central channel was cut to accommodate the armature. The use of a router makes this process simple. The channel was cut slightly smaller than the 1 1/2" diameter of the PVC tubing. The two thicknesses of Ethafoam and the central armature were all secured with hot melt glue.

The bases for the standing forms is a two part system. Bushings were secured to the bottom of the central armature. Toilet flanges were screwed to the deck with screws. The flanges provide a wide area to secure to the display deck.

Once the flange is screwed to the deck and the form with the bushing fit into the flange. The form could be easily rotated for exact positioning for display.

The "tooth" of the Polar-Fleece® and rounded backs and shoulders of the forms held the blankets with no slippage. Velcro was not used as had been planned, saving time and expense. Only minimal security stitching was used at strategic locations.

The exposed arms were covered with batting and Polar-fleece. The batting was used to give the PVC some shape.

The carved forms were covered with 200 wt. beige color Polar-Fleece®. The fleece provided enough padding to eliminate a layer of batting that is traditionally used under the fabric.

The "seams" were easily made by slicing a incision in the Ethafoam and pushing the fleece into it thus, only a minimal sewing was needed.

A pattern for each form design was made. The pattern was placed on top of the Ethafoam plank, secured with T-pins. A scroll saw was used to cut the the Ethafoam. The saw was quick and easily made tight curves. The disadvantage was that the blade was not long enough to cut the entire thickness. Two cuts were needed, one on each side. I found that with a few measurements of the patterns

placement, I could actually position the pattern.

I also used the saw to cut the initial rounding cuts. The blade could be adjusted at 30 - 45 degrees, for an even cut along all the edges. Precision was particularly good for the lower sections of the standing forms.

The mannequins consisted of seventeen designs. These were divided among standing and sitting forms. The standing forms all were made with internal armatures. The armatures provided the support that the taller forms needed as well as support for the arms. The sitting mannequins relied on their mass in order to sit up right. They were secured to the exhibition deck with brackets and screws.

Two thicknesses of ethafoam, 4" thick, were used for each form, both sitting and standing. For the standing mannequins a central channel was cut to accommodate the armature. The use a router makes this process simple. The channel was cut slightly smaller than the 1 1/2" diameter of the PVC tubing. The two thicknesses of ethafoam and the central armature were all secured with hot melt glue.

The armature for standing mannequins with arms was composed of a central post, with a "T" fitting to create the shoulders. Various angled fittings were used in order to achieve the the proper pose and position of the arms. The exposed arms were covered with batting and Polar-fleece. The batting was used to give the PVC some shape.

#### REFERENCES:

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