



# Conserve O Gram

July 1993

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## Storage Mounts For Feathered Headdresses And Soft-Sided Hats And Caps

There are many types of feathered bonnets manufactured and worn by North American Indians. These bonnets, sometimes called *war bonnets*, vary in stylistic details and component decorative parts, but the basic construction usually is much the same: a soft leather or wool cap with long feathers attached around the rim. A decorative brow band is attached to the front of the cap to assist the long feathers in falling back in a well-spaced and graceful angle from the forehead when the bonnet is worn. Pendant ornaments are often attached to each end of the brow band to hang on either side of the wearer's face like decorative braids. Some feathered bonnets are designed to bear long trailers sewn or tied on to hang down the wearer's back.

Feathered bonnets were traditionally kept in a closed position in a cylindrical rawhide parfleche when not in use. Most conservators feel that long-term storage should reflect the way the bonnets were originally engineered to be stored, in order to minimize stress or damage caused by the weight and drape of the feathers. Like ethnographic parfleches, the following storage mount relies on mechanical fastenings and can be made entirely without adhesives. This eliminates potential problems such as off-gassing and adhesive failure.

The storage technique suggested in this *Conserve O Gram* is appropriate only for structurally sound bonnets without trailers. Consult a conservator for advice on storing bonnets with trailers, and make no attempt to detach the trailers for storage.

The basic mount described here is also suitable for the storage of a wide range of soft-sided hats and caps.

For maximum efficiency and safety of the bonnet during handling and measuring, two people are necessary in making this storage mount.

### Procedure

1. *Evaluate the structure of the bonnet.* Place the bonnet on a clean padded surface. Carefully inspect the bonnet, paying close attention to how the parts are attached and the structural security of those attachments. If any feathers are detached, or the points of attachment are weak, it is best to store the bonnet flat with several layers of folded (not crumpled) non-buffered acid-free tissue between the layers of long feathers so that the feather barbules will not become entangled as they rest on each other. Insert a strip of polyethylene foam shelf liner into the cap to slightly open it to avoid a sharp crease at the flattened edges.

If the bonnet is structurally sound, continue the procedure outlined below.

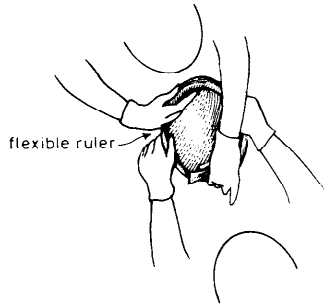
2. *Measure the interior dimensions of the cap.*



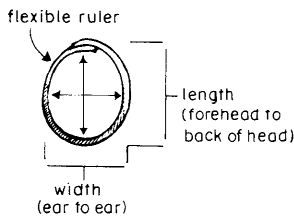
There are several ways to measure the interior size of soft-sided hats and caps. The following technique uses a flexible ruler available in stores carrying drafting supplies.

2-1. One person holds the bonnet upside down gently by the rim, so that the cap is open as it would be when worn.

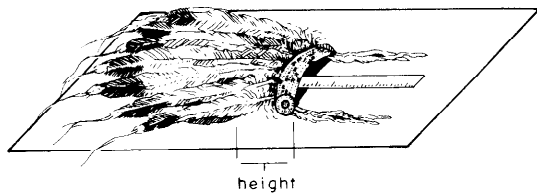
2-2. The other person measures the circumference of the cap by bending the ruler to conform to the inside of the cap's rim. Leave the ruler in this configuration.



2-3. Measure the length and width of the circular shape of the flexible ruler. Think of the length as extending from the center of the forehead to the back of head, and the width from ear to ear.

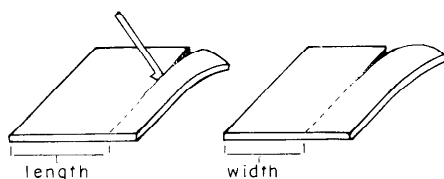


2-4. Measure the height of the cap from the center of the rim when flat to the apex of the crown.

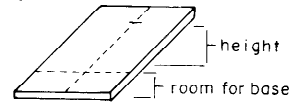


3. *Make the cap support.* The cap support will be made of two pieces of thick rigid foam set at right angles, connected by interlocking notches as illustrated.

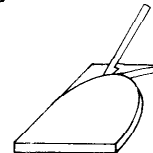
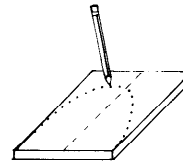
3-1. Mark the length measurement on a sheet of 3/8-inch to 1/2-inch-thick dense foam such as Volara,<sup>®</sup> Plastazote,<sup>®</sup> or Ethafoam,<sup>®</sup> and the width on another piece as illustrated. Mark the foam by punching it with a pencil, turning the pencil to leave a dark point. Trim both sheets to these dimensions with a knife.



3-2. Mark the height of the cap at the center of both sheets, starting about two inches above the bottom edge. The additional two inches will be needed for the side ornaments to curve gently onto the tray.

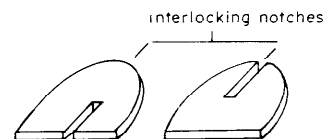


3-3. Mark a curved line on both sheets between the crown and the end of the horizontal line to approximate the semi-circular profile of the top of a head, and repeat the profile exactly on the other side. Make these profiles slightly smaller than the actual interior dimensions to allow for padding.



3-4. Cut the foam along the punched markings with a knife. You now have two hemispherical pieces of foam.

3-5. Cut a long notch, the exact width of the thickness of the foam, in the center of the base of one sheet, and in the top of the crown of the other as illustrated, to form interlocking notches. Each notch should extend to half the height.



3-6. Assemble these parts and gently test the fit to the interior of the cap. Pare down the foam sheets if necessary to allow room for about 1/4 inch of padding.

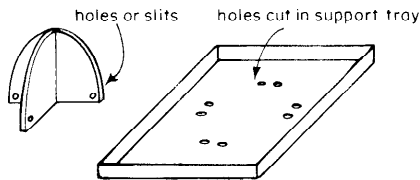
4. *Select a support tray.* An 11 x 14 inch acid-free museum specimen tray works quite well as a support tray for the average mounted bonnet. Alternatively, acid-free single or double corrugated cardboard sheets or the cardboard lids of acid-free record storage boxes can be

used as support trays. Make sure that the tray is large enough to support a tall standing structure without tipping and is sturdy enough to prohibit flexing when lifted.

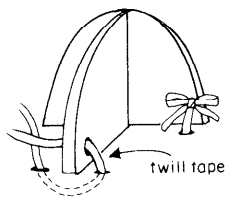
5. Attach cap mount to tray.

5-1. Cut a small slit or hole on the corner ends of both pieces of foam.

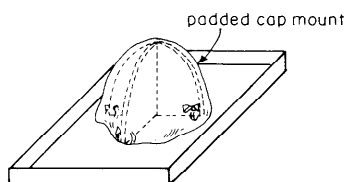
5-2. Place the interlocked cap mount in the center of the tray, and with a pencil, mark points on both sides of the four ends of the interlocked construction. Cut slits or holes at these points in the bottom of the tray.



5-3. Thread cotton twill tape through these holes and the holes in the ends of the cap mount to tie the cap mount to the tray. Tie the tape in tight bows so that the method of attachment is apparent.

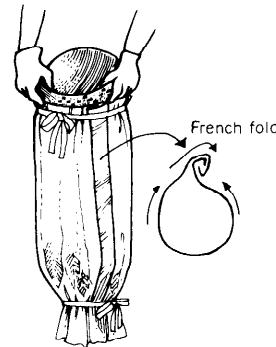


6. Pad the cap mount. Crumple non-buffered acid-free tissue to place between the ribs of the cap mount to round it out. Wrap the padded construction with several sheets of acid-free, unbuffered tissue or a layer of thin polyester quilt batting. If batting is used, cover this with an additional layer of unbuffered tissue to prevent snagging.



7. Wrap the bonnet in non-buffered acid-free tissue.

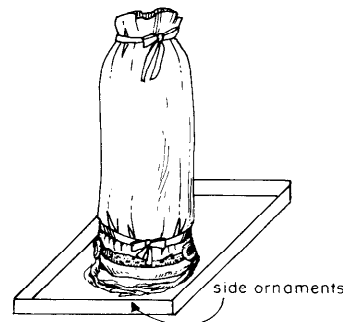
One person holds the bonnet upside down, while the other person inspects and adjusts the



bonnet's feathers to ensure that all feathers have fallen naturally into a compact shape and are not tangled or snagged by any other element. Wrap the bonnet in a cylinder of non-buffered acid-free tissue closed with a French fold as illustrated, excluding the side pendant ornaments. Tie cotton

twill tape around the brow band and just beyond the end of the feathers. Take care not to constrict the feather tops or the brow band.

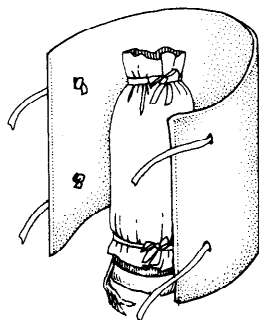
8. Mount the bonnet. Place the wrapped bonnet on the padded cap mount. Place the side pendant ornaments flat on the support tray, gently curving or looping them around the front (or back) of the bonnet, following their natural conformation. Note in pencil on the tray that the bonnet *itself* is not attached to the tray to avoid future mishandling.



9. Make a protective outer case for the bonnet.

If the bonnet is well wrapped in tissue with a tight French fold (see illustration), an outer case is optional for storage in optimum conditions. However, this additional envelope does provide more physical security and possibly more

protection in storage areas with excessive dust or poor climate control. Acid-free, unbuffered, flexible cardboard or polyethylene foam shelf liner sheets can be used for an outer *parfleche*. Punch holes about five inches from the ends on both sides of the sheet to accommodate twill tape ties. Place the fastening ties about three to four inches from the top and bottom of the cylinder, depending on the overall cylinder height. Knot the tape and pass it through the hole like sewing thread. Alternatively, cut two holes close together, and tie the tape around them with one long end to serve as a fastener for the modern *parfleche*. Position the outer case to enclose the tissue-wrapped bonnet, and tie so as to support but not constrict the contents.



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## Sources

Ethafoam: Dow Chemical USA/Packing and Industrial Foams Dept., 14955 Sprague Road, Strongsville, OH 44136, (216) 826-6000. Ask for a local distributor.

Plastazote: United Foam Plastics Corp., 172 E. Main Street, Georgetown, MA 01833-2107, (617) 352-2200.

Volara: Voltek, 100 Shepard Street, Lawrence, MA 01843, (617) 685-25577.

Non-buffered acid-free tissue, cotton twill tape, specimen trays, records storage box lids, and polyethylene foam shelf liners are available to NPS parks from Curatorial Services Division, WASO, or can be purchased from archival suppliers.

Polyester batting is available from local fabric stores.

Archival cardboard is available from archival materials suppliers.

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