



Conserve O Gram

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Storage Techniques For Canoe Paddles And Long-Handled Tools

Park museum collections may contain structurally sound canoe paddles or long-handled tools which can be safely and efficiently stored on inexpensive wooden racks. This *Conserve O Gram* provides guidance on constructing and installing such racks from inexpensive and readily available materials. Although this *Conserve O Gram* was written to illustrate proper storage for canoe paddles, dimensions can be changed to accommodate long-handled tools.

Materials

Acquire the materials listed below based upon the number and size of objects to be stored. (See source list on page 3 for vendors.)

- Desired length of 2" x 4" pine or fir boards. The length will be determined by the width and number of objects which are to be stored and the amount of wall space available for hanging storage. If this storage rack is installed on a studded wall, the board should be long enough to attach the lag screws to the studs on 16" or 24" centers.
- Approximately 8" of 1/2" wooden doweling for each object to be stored
- Wood or carpenter's glue (Elmer's® glue is a standard)
- Polyethylene foam padding, 1/4" thick
- Polyglase Waterbourne Finish
- 3-M double-faced tape or hot glue
- Soft, flexible, polyethylene tubing, 1/2" internal diameter (approximately 6" for each object to be stored)
- Velcro® tape
- Lag screws, wood screws, and masonry anchors as needed

Instructions

1. Determine the number of canoe paddles or tools to be stored using this technique, the availability of wall space, and if the wall can support the rack and objects.
2. Cut the 2" x 4" pine or fir boards to the desired lengths to accommodate the number of objects that need to be stored.
3. Drill two 1/2"-diameter holes 1" deep into the 2" x 4" board at an angle of 5 to 10 degrees (as shown in the end view of Figure 1) and far enough apart so the paddle's blade or widest part of the object will fit comfortably between the two plastic-covered dowels. Cut the dowels into two equal lengths (usually 3" - 6") and set them into the holes using wood or carpenter's glue. If pairs of objects are to be stored together, cut the dowels long enough to support both objects (when weight permits). When placing the dowels in the board, allow sufficient clearance between each pair to prevent the hanging objects from touching each other (5" - 7" between objects normally is enough).

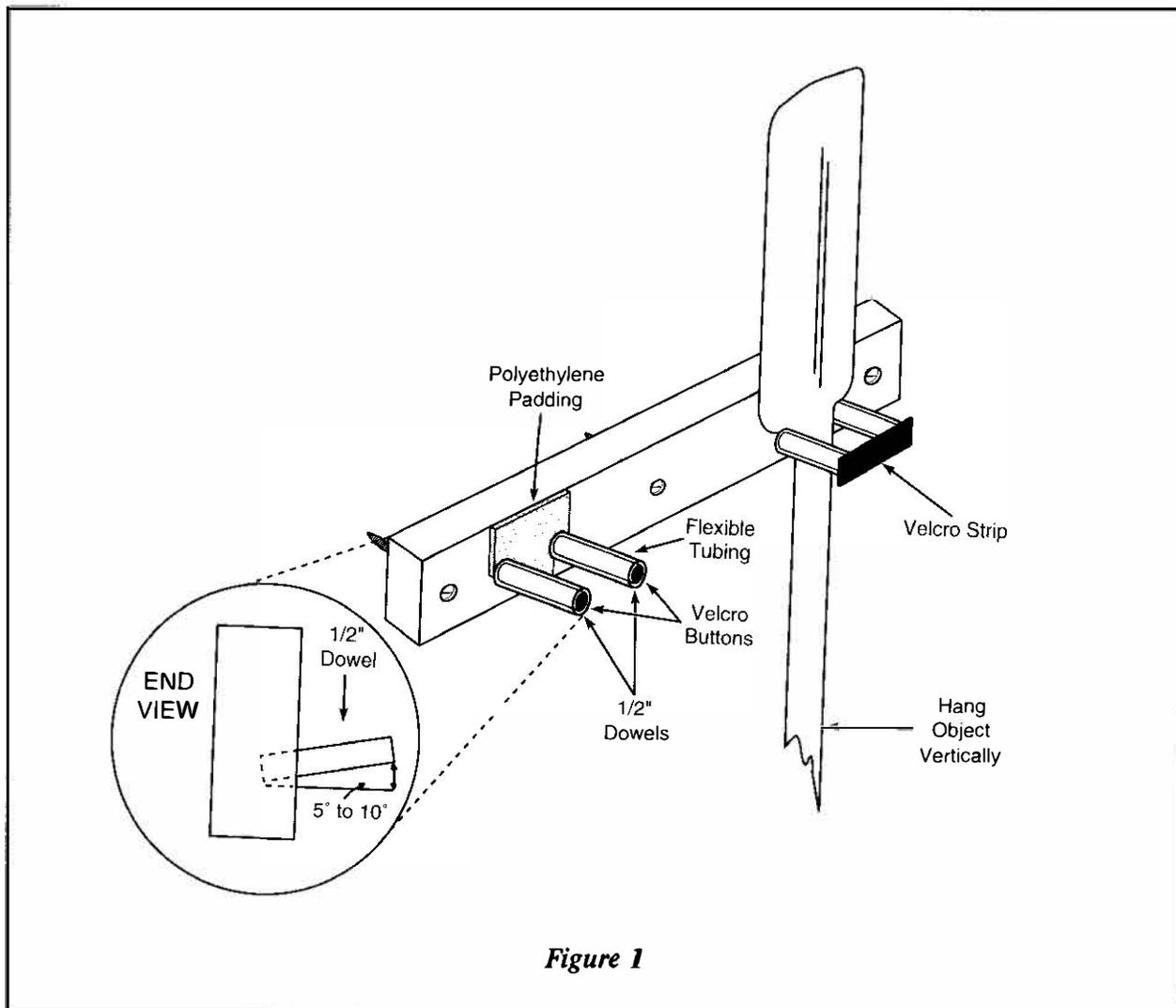


Figure 1

4. Paint all wood surfaces with two coats of water-based aliphatic urethane (Polyglase Waterbourne Finish) to minimize outgassing of vapors from the wood.
 5. Adhere 1/4"-thick polyethylene padding onto the front of the 2" x 4" board (as shown in the illustration) with 3-M double-faced tape or hot glue to provide a cushioning barrier between the paddle and the wood surface. The padding can be cut to fit only behind the object or to extend the full length of the board since it may need to cover a larger area for different sized objects. If more than one object is mounted on each set of dowels, cut a second piece of polyethylene padding to fit between the objects.
 6. For a wood frame wall, locate the studs (usually spaced at 16" or 24" centers) in the wall. Drill 1/4" to 5/16" pilot holes into the wooden board at the location of each stud. Mount the completed rack to the wall with 1/4" lag screws. Countersink the heads of the lag screws below the surface of the board to prevent objects from being scratched by the exposed head of the screw.
- For a masonry wall, drill 5/16" holes into the wall. Tap masonry anchors into the hole with a hammer. Attach the rack to the wall by inserting lag screws with washers into the masonry anchors. Countersink the heads of the lag screws below the surface of the board

to prevent objects from being scratched by the exposed head of the screw.

7. Cut appropriate lengths of the 1/2"-diameter soft flexible tubing and slip them over the dowels as sleeves to cushion the objects.

NOTE: Do not use flexible plasticized, polyvinyl chloride (known as Tygon®) tubing because it damages objects that it touches. Tubing made of polyethylene, polypropylene, polyolefin, silicone, or Teflon® can be used instead.

8. Cut two 1/2"-diameter circles from the hook portion of a Velcro strip and glue one to the end of each dowel (as shown in the illustration). Attach a strip of Velcro loop across each pair of dowels to keep the objects from accidentally slipping off the rack.

9. If the angle of the object (blade of a shovel or tines of a fork) causes the handle to touch the wall, the handle should be wrapped in polyethylene foam to protect it from being scratched.

Sources

Polyglase Waterbourne Finish may be available from local hardware or building supply stores. Contact Camger Chemical Systems, Inc., 364 Main Street, Norfolk, MA 02056, (508) 528-5787.

Polyethylene foam padding is available to parks from Curatorial Services Division, Harpers Ferry Office. See *NPS Tools of the Trade*, Stock Number G06. Polyethylene foam padding also is available from University Products, Inc., P.O. Box 101, Holyoke, MA 01041-0101, (800) 762-1165.

Polyethylene or polypropylene tubing may be available from local hardware or building supply stores. Polyethylene tubing is available from Allied Resinous, Box 620 Clark Street, Whitney Road, Conneaut, OH 44030, (800) 325-5176. Contact Customer Service to locate a nearby distributor. Polypropylene tubing is available from Fisher Scientific, 711 Forbes Avenue, Pittsburgh, PA 15219. A call to (800) 766-7000 will be directed to the nearest Fisher Customer Support Center.

Velcro is available from local fabric stores.

Wooden doweling, carpenter's glue, lag screws, wood screws, and masonry anchors are available from local hardware or building supply stores.

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