

## Easy-to-Make Weights

by Hugh Phibbs

The materials needed for preservation framing are not expensive. Bristle brushes, gluten free paste, good quality water, Japanese tissue, acid-free blotter, and microspatulas are all easily found in archival supply catalogues at modest prices. One piece of equipment which can be manufactured in the shop is a set of weights.

Weights are critical for stabilizing art as it is positioned, and for preventing the cockling of the art while its hinges are drying. A good weight should be dense and compact so that it can be easily handled and massive enough to have adequate holding power.

Pieces of brick or stacks of cut glass are not dense enough to provide sufficient weight without reaching an unwieldy size. Many metals can provide adequate density but are hard to find in the appropriate shape; brass or stainless steel could serve quite well if they were available in bars of the proper size. Lead is the heaviest metal, and is inexpensively available in a variety of shapes. Industrial suppliers can provide lead ingots which can be sawed into bars of an appropriate size, but the resulting shape may not be easy to handle.

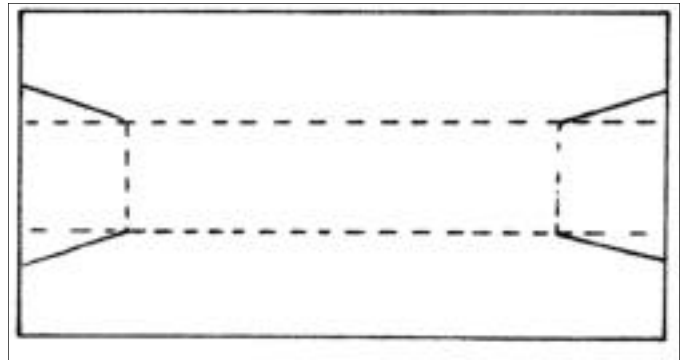
To have sufficient heft for stabilizing the art and holding it flat during hinging, a weight should have a mass of approximately two pounds. The optimal shape is one which is easy to pick up, which will cover even the largest of hinges, and can be stacked when not in use. A trapezoidal solid which is one to one and one half inches by four inches on the bottom, roughly one inch high, and which tapers out to a top which is one and one half to two inches by four and one half inches, is ideal. This inverted trapezoid will be easy to handle because its sides overhang and

provide a surface which can be gripped for lifting. The problem comes in creating this shape in lead. The answer is a mass of tiny lead shot which is glued together inside a paper form.

Lead shot can be sewn into leather bags or packaged in impact-resistant plastic bottles, but the first type of package lacks compactness and the second often lacks a flat surface of the appropriate dimensions. If either of these packages breaks open, the dispersed shot would likely turn up around the shop for some time to come. If the shot is glued together, it can be held in a more suitable shape and will resist scattering if the weight is dropped. Small shot can be more densely packed together and will give a greater latitude in the creation of a useful shape than large shot will. Enough shot should be purchased to create the desired number of weights at two pounds each.

The paper forms can be made of two-ply board which has been cut into pieces measuring roughly three inches by six inches. The board can then be folded twice along its length one inch in from each long edge. Marks should be made along these folds at points one inch from each edge and cuts created which proceed from these marks to a point along the edge which is three quarters of an inch from the corner. (See diagram). The trapezoidal shaped outlined by these cuts at each end should be folded up and the tabs which project out at the ends should be folded around them as the long sides are also folded up. The overlapping tabs at the ends should be secured with strips of linen tape which progress from the end of each long side, across the end, and down the end of the far side. A tray will be created with a bottom which is





*Paper forms of two ply board can be used to make weights in the desired shape.*

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one inch by four inches and which has an opening which is slightly wider.

The glue used to hold the shot together can be thermoplastic or a synthetic emulsion. If a hot melt glue is used, it should be applied to part of the bottom of the board form and some shot should be quickly stirred into it. Those glues which have a longer cooling time will allow for more thorough mixing of the shot and the glue. As each layer is added, care must be taken to ensure that all the shot has been enclosed in part of the glue. A scaling layer of the hot melt can be added to the top and a piece of board sufficiently large to cover the upper surface can be glued in place. The weight should not be lifted off the table until it is cool, since the weight of the lead could cause the bottom to sag away from a flat profile.

If a synthetic emulsion such as a PVA glue is used, a portion of it can be poured onto a sheet of wax paper and the shot can be massaged into it, to ensure even coverage. The glue-covered shot can be then poured into the form and left to dry. There should be enough glue mixed in to fill all the spaces between the beads of shot and the weights will require a number of days for drying, during which time they should be left on a flat surface to maintain the flatness of their bottom surfaces.

The weight made with hot melt glue may be somewhat less dense because it is more difficult to mix the lead with the glue before it cools than it is to mix the shot with the wet emulsion. However, the hot melt weight can be used as soon as it is cool and has been covered. Since many plastics have unknown components, it would be wise to iron a layer of aluminum/plastic laminate to the outside of the weight. A covering of felt can also be adhered to the outside to keep the weight from showing a soiled surface. Additional pads of felt which can be adhered to the bottom to soften the impact of the weight as it is set down and increase the air space underneath the weight to enhance drying. The emulsion bonded weight should be given the same sort of felt skin once it has dried and a board has been attached to its top surface. Either type of weight should give years of useful service in a preservation framing shop. ■