

This fragile nautilus shell was securely mounted by brass mounts, each carefully formed and padded to provide three points of support.



Object Mounting Options

By James Miller,
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Successfully mounting 3-D objects often calls for using a variety of the many options available today

For framers who are quite proficient in mounting flat items, such as art on paper or canvas, mounting three-dimensional objects can present unaccustomed challenges. Mounting options for flat items are well established, while the three-dimensional objects that customers may want framed come in a seemingly infinite variety of shapes, sizes, weights, masses, and structural integrity. This often calls for a fresh approach to mounting.

Value is always an issue to be discussed with customers during frame design, no matter what is being framed. For items of little or no value, the choices can be narrowed to the fastest and cheapest mounting methods and material, including some sort of glue. Most objects to be framed, though, are not worthless. The objects that customers bring in for framing usually have significant monetary and/or sentimental value. Preservation usually is important, which means the mounting should be non-invasive and completely reversible, regardless of whether it is intended to be permanent or temporary.

Customers may also want their framed objects to be removable. For example, a collector of signed baseballs may want to be able to remove and replace them for trading. A collector of pens may want to take them out and use them occasionally. A framed musical instrument makes a beautiful display, but perhaps a customer wants to take it out and play. Silver tableware may require removal for periodic polishing.

Object mounting must also withstand gravity. It also



Two pieces of clear polyester film make a supportive, secure mount for this heavy book.

must withstand the forces of impact and vibration. These stresses may occur only occasionally, but they are generally unpredictable and may be significant. A hard bump—such as dropping—might cause a mount to fail, allowing the object to fall. The stress of impact may also damage or destroy an object even if the mount holds. It is important to not only provide adequate support for an object's weight, but it is also wise to design mounting that accommodates other occasional stresses. In some cases, if a mount is somewhat flexible, it may “give” enough to lessen an impact that would be damaging if it were rigid. In other cases the more rigid the mount, the better. Various objects require different mounting considerations. This concept of stress management in object mounting involves the mounting board as well as the mount itself.

Mounting Boards

Matboard and Foamboard. Mounting boards are often interchangeable, and framers tend to use what is handy in the shop. Common materials, such as matboard and foamboard, may be suitable for lightweight object mounting, although they have limited rigidity and structural strength. A laminated assembly, such as foamboard sandwiched between two layers of 4-ply matboard, can often result in a board that is lightweight, structurally adequate, and easy to work with. Such boards may be suitable for moderate to high levels of preservation.

High-Density Foamboard. Gator-Foam and Mighty Core are examples of high-density foamboards, similar to common foamboard in appearance and handling. However, they are normally covered with clay coat or a plastic laminate, which gives them a harder surface



Straps of clear polyester film are inconspicuous but hold this heavy medal securely in place.



The clear film straps used to mount these dog tags are completely non-invasive, reversible, and inconspicuous.



These playing cards were wrapped in clear film, using a backer trimmed out of polyflute to fit the shapes of the cards. This assembly may be elevated off the mount board for a floating appearance.

and more warp-resistance. These industrial products may chemically off-gas in a closed-up environment of a picture frame.

Traditional Wood Products are sometimes used for mounting heavy objects. Plywood, Masonite, MDF, and particleboard may be purchased from local home improvement stores, and they are okay for mounting very heavy objects. These boards are especially suitable for screwed mounts, such as wire or rod, but they have some disadvantages. They are heavy, often requiring extra frame reinforcements and heavy-duty hanging hardware. Wood products may be chemically invasive, too. Various finishing materials and resins are used in their manufacture, some of which could chemically react inside the closed-up environment of a frame.

Acrylic Sheetting, the same material used for glazing in some framing, makes a good mounting board for some applications. It is rigid, moderately light weight, moisture and warp resistant, and chemically stable. Acrylic is especially suitable for mounting items that may be chemically sensitive, such as leather, seashells, and other organic items. Generally, mounts require drilling the acrylic board and passing them through to the back for attachment.

Fluted Polypropylene Sheetting is also known as polyflute and by the brand name Coroplast. It is among the most versatile object mounting boards, but most framers are still not aware of its benefits. Polyflute is commonly used by sign makers and is available from their distributors in several thicknesses and colors. It is also available from some distributors of industrial plastic sheet and tube products. Most framing distributors do not yet stock this type of

board, but they will as it becomes more popular with framers. Like acrylic, polyflute is non-hygroscopic and chemically stable but much lighter in weight and not as rigid. It cuts easily with an X-Acto knife or razor blade or on a mat cutter or wall-mounted glass/board cutter. 10 mm polyflute will support several pounds of weight, or thinner boards may be layered with flutes crossed for greatest rigidity. The unique feature of this extruded plastic sheet is that it has air spaces between the flutes, handy for encapsulating some mounts with hard-setting glue.

Mounting substrates other than matboard generally have surfaces unacceptable for the decorative purposes of framing. Mounting boards of all kinds may also be covered by matboard or fabric suitable for the project at hand.

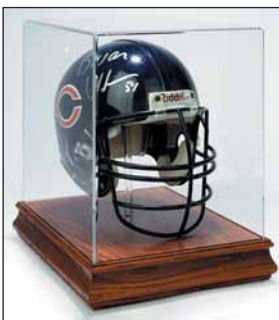
Most mounting board surfaces, whether paper, fabric, suede (polyester flocking), or other materials, may fail under stress. For example, under stress the fibers of a matboard's flocking or paper covering may separate where glue spots were applied. A fabric covering, even if glued to the board, may pull loose and sag under stress. Because board surfaces are relatively weak, mounts that penetrate the board assembly and attach to its back are generally stronger.

Mounting Methods

Thread and Cord. Needle-and-thread stitching is used to mount fabric items like garments. An alphacellulose board trimmed to fit inside a garment provides support—with or without added padding, such as polyester quilt batting. A large number of stitches may be required to attach a garment and its support to a solid backing board. Hand stitching through a backing board, the back of a garment, and a filler board is time consuming and



Two EZ-Tach cords hold this pen in place, using their secure fasteners behind the mount board.



These examples of fabricated mounts show how they may be used to support objects attractively, whether the mounts are to be permanent or temporary.

often difficult, but it is recommended for fragile garments. Attach-EZ is much faster for mounting common garments, such as jerseys. The system's H-shaped nylon fasteners are stronger than thread, so fewer mounting points are needed. Fasteners up to 1/2" long can be fastened through all the layers.

Mounts of tied thread or cord are fairly easy and useful for objects that have convenient mounting points. The arms, legs, and neck of a doll, for example, might be handy for mounting by thread or cord. The EZ-Tach mounting system provides adjustable length cords with molded male/female fasteners that eliminate tying, making mounting easier. Thread and cord mounts are relatively weak compared to some mounting methods, but that may be a benefit in some situations. When a breakaway mount is desirable, a certain thread or cord may be selected for its limited

strength. These mounts may also fail by abrasion, which could fray and weaken the strands over time.

Monofilament Line. Fishing line is readily available and may be used for many of the same applications as thread or cord. Since it is made of extruded plastic, monofilament line generally is stronger. But it may stretch under tension, and it is also more difficult to tie securely. Due to the plastic's inherent "memory," monofilament tends to straighten itself, loosening tied knots. A spot of glue prevents that. EZ-Tach monofilament nylon mounts, like the cord mounts, have molded male/female fasteners that eliminate tying. Nylon monofilament is light sensitive; it will discolor and weaken with exposure to UV light. Polyester monofilament has similar appearance and handling characteristics and also is used as fishing line, but polyester is more resistant to deterioration from light. Both materials are abrasion-resistant. Monofilament line, when used for mounting, may abrade the object's surface. Slight but constant movement due to handling, ambient vibration, and normal expansion/contraction cycles create a sort of sawing action that might damage some items. Over time, monofilament line could also scratch a painted finish or cut into an object made of soft material, such as rubber, leather, or wood.

Wire. All kinds of wire may be suitable for non-removable mounting of heavy, rigid items that require just a few points of support. Firearms and golf clubs, for example, may be good candidates for mounting by stainless steel picture hanging wire. Strong, rust resistant, and easy to work with, it may be poked through holes drilled in sturdy mount board and the ends simply twisted together on the back. Lightweight items, such as pens or knitting needles, may be mounted by

a single strand taken from seven-strand stainless steel wire.

Brass or aluminum wire may also be suitable for mounting such rigid, lightweight items. However, it is important to note that both brass and aluminum fatigue easily. These wires may be significantly weakened by repeated or radical bending or twisting.

Abrasion and scratching are often concerns when mounting by wire. Various padding materials may be used to protect the item mounted. Polyolefin shrink tubing, a product of the electrical industry used for insulating wire connections, comes in several colors and sizes. Before a mount is created, it may be slipped over the wire and shrink-fit snugly. Felt and other types of fabric, neoprene sheeting, and various flexible plastic products may also be used as padding materials for wire mounts.

Formed Rod. Rods made of steel or brass may be used in many of the same applications as wire mounts. However, because rods are stronger and stiffer, it is possible to create mounts that support an item while elevating it off the surface of the mount board. This is especially useful for highly dimensional objects, such as musical instruments. A violin, for example, may be mounted with its neck a few inches above the mount board's surface.

Clear Polyester Film. Melinex 516 (formerly Mylar-D) is a transparent plastic film, one of few such products that have been tested and approved for use by the U.S. Library of Congress. It is well suited for a wide variety of object mounting tasks as well as its traditional use for encapsulating important documents. Chemically inert, long-term stable, and resistant to light damage, it is generally suitable for preservation mounting. It has a smooth



This clarinet was mounted using two formed steel mounts covered with matte black shrink tubing, which were embedded in the air space between flutes of the fluted polypropylene mount board.



This leather object was gently sewn to steel rods that were covered with shrink tubing.



Nylon tulle provides an almost-invisible mount for this signed baseball. The fabric edges were pulled through the nest hole and glued to the back of the mount board.

surface and high clarity, so it is inconspicuous. It is extremely strong, but cuts easily with a razor blade or X-Acto knife. Coins and medals may be mounted securely and quickly with clear film, trimmed to the shape of the item with "legs" to pass through the mount board. Strips of clear film may be used instead of thread, cord, or monofilament mounts. A narrow strap of clear film, perhaps 1/8" wide, provides better support and spreads stress over a larger area than monofilament line, for example. Clear film is stronger than monofilament line and will not stretch. It is easy to work with, too. An X-Acto knife with a #11 (thin, tapered) blade may be used to make slots in the mount board, so that a clear film strap may be passed through the board and quickly attached on the back with double-sided tape. Most framing adhesives and tapes will not stick securely to the high-slip, glossy surface of Melinex 516. When mounting with clear polyester film, a high quality polyester tape with acrylic adhesive should be used. ATG is specifically not recommended. 3M and American Specialty Adhesive Products (ASAP) are recommended manufacturers of these specialty tapes.

Fine Mesh Fabrics. Nylon tulle, also known as wedding veil fabric, is available from retail fabric stores. It is useful for mounting objects like golf balls, baseballs, hockey pucks, and other spherical or oddly shaped items, even large ones. Generally, the technique involves a nest hole in the mount board, through which the fine mesh fabric's edges are pulled and then secured to the back of the board. The expanded-mesh nylon material is strong but somewhat light sensitive, so it may weaken and discolor over time. Crepe-line is a similar looking French

organdy made of silk, which is also light sensitive. Stabiltex is a supple, very finely woven polyester fabric, which is long-term stable and resistant to light damage. Stabiltex and Crepline are preservation-grade fabrics commonly used by conservators. All of these fabrics come in a variety of colors to match the objects wrapped in them and may be useful for mounting fragile objects as well as spherical ones.

Pre-fabricated Acrylic Mounts.

Object mounts may be fabricated by cutting and heat-forming clear acrylic sheeting to fit specific applications. Two well-known sources for specialty acrylic mounts are Gemini Moulding/Showcase Acrylics in the Midwest, and Superior Acrylic Framing on the West Coast. Both of these framing industry suppliers stock a variety of standard mounts

for baseballs, golf balls, guitars, and other commonly mounted objects. These and other acrylic fabricators in many metropolitan areas have the equipment and skills to create mounts to order. Sometimes framers can make their own fabricated acrylic mounts as well. However, it is important to realize that uncontrolled heating of acrylic to form it may significantly weaken the plastic.

These are effective and versatile object mounting techniques, but the possibilities are endless. For framers who specialize in object framing, experimentation is essential. As new object mounting challenges come along, framers need to meet those challenges with innovative mounting options that are secure, safe for the objects, and suitable for customers' purposes and

budgets. No chances should ever be taken with customers' valuable objects, however, because that may put them at risk. Instead, practice on similar items and keep those successful experiments for gallery demonstrations. ■

James Miller, MCPF, GCF, founded his framing business, ArtFrame, Inc., in suburban Columbus, OH, in 1988, where he specializes in the preservation framing of art, heirlooms, and three-dimensional objects. He is also an accomplished calligrapher. James, who holds a Bachelor's degree in Business Administration, has served as chairman of the PPGA Certification Board, where he helped develop the MCPF exam, and has been chairman of the FACTS Education Committee. He also teaches at numerous industry venues and writes regularly for PFM.



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