

Interior Wood Finishing in Medieval and Renaissance Europe

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Wood is finished for a variety of reasons. The finish provides a barrier layer that slows the transmission of water vapor and reduces seasonal wood movement. It also provides some resistance to decay agents such as bacteria, fungi, and insects. Aside from its utilitarian aspects, wood finishing can also be a means of decoration. In this article we will first survey the wood finishing technologies available, the available evidence for their use, and the changes in aesthetics that influenced the choices of craftsmen. The second part of the article is a brief overview of modern finishing techniques and some appropriate uses for each.

Wood is composed of bundles of cellulose fibers bound together with lignin. Differences in the cellular structure of the different species account for the varying properties of different timbers. The cellulose fibers absorb and release moisture in an attempt to maintain equilibrium with the atmosphere. This causes the fibers to expand or contract and accounts for seasonal wood movement. Differences in radial and tangential movement and the inherent stresses in the wood may cause an unconstrained piece of wood to warp, twist, or otherwise distort. Wood that has been fashioned into furniture or other interior woodwork is constrained in its movement and is liable to crack or split unless the joinery techniques used accommodate wood movement. Finishing retards this movement and makes the wood less liable to crack or split. For an exceedingly detailed explanation of why and how wood moves, the reader is directed to Hoadley's *Understanding Wood* (1980).

Oil

Oils are broadly of two types, drying and non-drying. The drying oils such as linseed or walnut oil will eventually dry hard while the non-drying oils will, at best, harden into a

sticky mass. Linseed oil appears to have been the most commonly used oil due to both its properties and its availability as a by-product of flax production. Linseed oil can be processed by boiling and the addition of metallic dryers to speed its drying time. Oil provides a limited degree of protection. There is no evidence for the use of oil by itself as a finish but it was commonly used as a binder for paints and stains or as a solvent for varnish.

Varnish

Varnishes are produced by combining a resin with a solvent such as oil or alcohol. Various natural resins are documented in period such as amber, Venice Turpentine (hardened larch resin), copal, and sandarac. All of these are crystallized or fossilized plant saps. Varnish provides better protection than oil since the addition of resin permits a harder finish. Shellac, a resin made from the secretions of the lac bug, does not appear to be known in Europe until the 17th Century, although the dye is mentioned in Cennini as a pigment (1954). Oil based varnishes are the most common, although we do find the recipes for spirit varnish in the early 16th Century Marciana Manuscript (Merrifield 1999).

The earliest known varnish recipe is from Theophilus (11th Century) who recommends mixing it with red pigment as a final coat for woodwork. (1979). English building accounts refer to colored varnish being used on interior woodwork by the 13th Century (Salzman 1992). The first evidence we have for the use of varnish on furniture, as opposed to interior woodwork is from the Thirteenth Century. The household accounts of Edward I (1274-1295) mention a payment of 8 *d.* to one Stephen le Joigneur for varnishing two coffers (Eastlake 2001). Of similar date is a Venetian guild regulation from 1283 regarding the varnishing of caskets, tables, and woodwork (Huth 1971). By this time Venetian varnishing was apparently well developed enough to be regarded as a separate specialty within the guild of *depentores* or painters. By the mid-16th Century the use of varnish on furniture was

common enough that we find a contract between a joiner and a customer specifying that a particular piece of furniture was to be provided without varnish (Thirion 1998 reproduces a Parisian joiner's contract of 1556 where the customer specifies a "couche et couchette de boys de noier san vernis"). A few years later, the *Ständebuch* of Jost Amman and Hans Sachs specifically mentions varnished furniture as the customary product of the joiner (1973).

Paint

Paint consists of a pigment, such as ochre, mixed with a binder, such as linseed oil or egg yolk. We have a range of period paint recipes available, but most of these are for artists' paints. The type of paint used on furniture varied with its period and intended purpose. Based on English building accounts, we know that linseed oil was used as the binder for interior woodwork paint. Artists' paints were probably used on high-style pieces such as Italian Renaissance *cassone*. Medieval pigments were available in a wide range of colors. While significant amounts of work have been done on the composition of artists' paints, little work has been done on the composition of paints used in more common applications. Medieval painters were not specialized and it was normal for an artist to paint walls, sculptures, and furniture – not to mention banners, wall hangings, and anything else his patron desired (Binski 1991; Eames 1977). Given this fact, it appears reasonable to assume that artists' paints and techniques were used on high-style pieces at the least. The extent to which these techniques may have journeyed farther down the social scale is open to question.

Theophilus gives a recipe for linseed oil and cinnabar stain for application to wood (1979). Cennini gives extensive directions on the preparation of egg tempera; he also gives instructions for painting in oil, but labels it a "German" technique, which points to the difference in painting materials north and south of the Alps (Cennini 1954).

The earliest surviving pieces of painted furniture (e.g. the armoire in the Cathedral Treasury at Bayeaux) date from the 13th Century, unfortunately the type of paint used has not been documented (Eames 1977; Windisch-Graetz 1982). The de Bury chest from the next century (1340-45) is painted with a mixture of tempera and oil paints on a gesso ground (Chinnery 1979). Eames documents numerous accounts of painted furniture in period literature (1977). Eames also notes that red and green were the most common colors for chests but that white, yellow, and black are also mentioned in accounts.

By the 14th Century we have documentary evidence for the use of oil paint on interior woodwork in the form of payments to painters for oil, pigments, and varnish for decorating interior woodwork (Salzman 1992). Painted surfaces were normally prepared with a ground of gesso in Mediterranean countries or distemper (chalk mixed with glue or size) in northern Europe (Binski 1991). The effect of either treatment is to fill the grain of the wood and provide a smooth surface upon which to paint.

Wax

Various natural waxes such as beeswax can be used as a finish or as a polish over another finish. Wax by itself is too soft to provide much protection.

Decorative Treatments

Other decorative treatments can be applied to a wooden object such as gilding, marquetry, and gesso. These are not really classified as finishing techniques since the wood is usually sealed or otherwise treated prior to decoration. Wood was also occasionally covered in leather, for weatherproofing, or in a rich fabric such as velvet.

Application

Determination of the original finish on a piece is often problematic since it is likely that a piece may have been refinished at several points in its lifetime. While stratigraphic

analysis of a piece can tell us much about the sequence of finishing on a piece, this sort of work is expensive and has not been carried out on many pieces. A detailed account of one such examination can be found in the article by James Martin (Martin 1998). Prior to the Eleventh Century, evidence for finishing is simply non-existent. Based on surviving evidence, most early medieval furniture appears to have been painted, as was a large portion of the plainer pieces in later eras. Beginning in the 15th Century, with the influence of the Renaissance, an aesthetic shift appears to have occurred and fashion began to dictate different decorative treatments for furniture. Italian decorative techniques such as marquetry and high relief carving began to infiltrate north of the Alps and seem to have brought with them a fashion for unpainted wood. For example, in the numerous burgher interiors so accurately depicted by the Flemish painters of the late 15th and early 16th Centuries we see a few pieces of painted furniture, but they are greatly outnumbered by those that appear to be unpainted. By the time we reach the 16th Century we see extensive use of paint, gilding, inlays, and carving – sometimes all on the same piece of furniture.

Modern Finishing Applications

Selecting an appropriate finish for historical recreations is a balancing act between a finish that is close to historically accurate and one that will withstand the rigors of use. Obviously, the use to which the item is put will help to determine the appropriate finish. In this discussion, I am deliberately not covering finishes that require equipment beyond those of the average home woodworker. For those interested in duplicating Medieval and Renaissance finishing recipes I would strongly recommend reading Sam Allen's *Classic Finishing Techniques* (Allen 1994). Although Allen is primarily working from late Seventeenth and early Eighteenth Century sources his recipes are similar to those found in Merrifield. Since period formulas often call for the use of lead, mercury, and arsenic compounds and/or the heating of flammable

liquids over open flames extreme caution is advised.

Wax

Wax leaves a pleasant sheen to an item and is easy to apply. Unfortunately, wax is very soft and offers little to no protection for an item. It is best used as a polish over another finish. Whether or not wax was used this way in period is an open question.

Paint

Paint is one of the best all around finishes. Modern water-based paints are available in a wide range of colors. Period paint finishes used a ground of either gesso or chalk to fill the wood grain and provide a base for the paint. This is less necessary on close-grained woods such as pine and poplar than it is on the open-grained woods (such as oak) that were commonly used in period. The appearance of a filled grain can be duplicated by using shellac, gesso, or wood filler.

Varnish

Modern oil varnishes come in two varieties - long oil (exterior) and short oil (interior). The long oil varnishes (sold as "Marine" or "Spar" varnishes) are extremely weather resistant, but not terribly durable. They also impart a recognizable yellow plastic look to the piece. Short oil varnishes dry to a harder finish but are not as resistant to moisture. Water-based polyurethane varnishes can be used, but will make the piece look as though it were dipped in plastic unless used sparingly. The water in them also has a nasty habit of raising wood grain.

Oil

Oil based finishes such as tung or linseed oil are appropriate for later period pieces that feature unpainted surfaces. Oil is not particularly durable and is not suitable for pieces that will be exposed to the elements. Note most many modern "oil" finishes are actually mixtures of oil and varnish. These are not too far off from many period recipes.

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