Canadian Conservation Institute
Institut canadien de conservation

CCI Notes 7/2

Care of Furniture Finishes

Caution!

This Note discusses actions that will physically affect the object, and/or procedures that involve the use of chemicals. Exercise caution, and seek qualified assistance if in doubt.

Introduction

The 'finish' of a piece of wooden furniture refers to the surface of the wood and how it may have been changed cosmetically by the builder or altered through use. In most cases the finish is a discrete coating that keeps the wood beneath from being soiled. Half the value of a piece of furniture resides in its finish, so maintaining it has economic as well as historical and aesthetic benefits.

Furniture finishes are often assumed to be some type of varnish, but in fact many materials can be used. There are five basic categories of finishes (although combinations and mixtures of these are also encountered):

- dry pigment
- paint
- clear finishes
- oil
- wax

These finishes include fluids, solids, and semi-solids; in addition, the fluids may be single substances (e.g. oils or waxes) or they may take the form of solutions, emulsions, or suspensions. Because of this variety of types and the wide range of application techniques, discussions of surface finishes are very complex. A detailed discussion of all surface finishes is beyond the scope of this Note; however, some general directions on basic preventive care and cleaning for coated wooden furnishings are provided.

Dry Pigment

One of the simplest ways to modify the surface of a wooden object is to apply raw pigment (examples include natural earth pigments such as ochres and umbers, black wood ash, and white clay). These coatings have no binder; the pigment is applied either dry or in a slurry with water.

Dry pigments adhere easily to wood because it is porous. They do not form an intact film, so are unaffected by movement of wood due to fluctuations in relative humidity.

The surface of dry pigment finishes is often fragile and powdery, and can be easily smeared or removed by handling. Because the surface is so vulnerable, furniture finished in this manner should not be handled directly but instead lifted and moved with a support such as a tray or trolley. Such furniture should also be covered to protect it from dust, which may be indistinguishable from the powdered pigment during cleaning. As even light brushing to remove dust can loosen the pigment, only experienced personnel should clean furniture with a dry pigment finish.

This kind of finish is rarely encountered in North American furniture, where any application of dry pigment was probably followed by application of a binder.

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Paint

Paints also use pigments for colour and surface effect, but they include a binder such as a drying oil or a resin in solution to hold the pigment more firmly to the surface. A wide array of synthetic polymers have been used as binders since the middle of the 20th century. However, prior to that most paints in Western cultures were made with boiled linseed oil as the basis for the binder, making them opaque varnishes. Casein protein from milk was another option that produced an equally insoluble but more matte finish.

Painted wooden surfaces are usually quite durable because the paint soaks into the wood and produces a strong bond. However, because paint forms a complete film on wooden objects, it is prone to cracking and loosening as the wood expands and contracts. Adhesion between the paint and the surface may also fail with time, causing flaking and loss. Deterioration of the binders in paints is primarily due to light, which can cause break-down of the film, powdering, and changes in colour. Painted surfaces are also susceptible to changes in taste and fashion, and it is not uncommon to find painted furniture stripped and refinished with clear coatings.

Paint finishes in good condition are easier to maintain than dry pigment finishes. A sound painted surface can probably be safely cleaned with a damp cloth — a process that is closer to damp dusting than washing. Begin by soaking a clean, lint-free cloth (a well-laundered cloth diaper is ideal) in warm water with a few drops of detergent. Wring the cloth out until it is almost dry, and then rub it hard on a small, unobtrusive area to test that the paint is not soluble in water. If there is no trace of colour on the cloth proceed with cleaning.

Odourless paint thinner (e.g. Varsol or mineral spirits) is another option for cleaning painted surfaces in good condition. First moisten a cotton swab with the paint thinner and test the finish in an unobtrusive area. If it proves safe (i.e. there is no colour on the swab after several seconds), dampen a soft, lint-free cloth with the solvent and proceed as above, replacing cloths as they become dirty. Paint thinners will give off fumes, so be sure to work in a well-ventilated area or outdoors. Hang used cloths outside to dry, and then discard or wash them. Paint thinner should lift off wax and dirt; if dirt is not removed, discontinue the process.

Paint finishes that have deteriorated must be handled carefully to prevent loose pieces from being caught on gloves and clothing, and lost. If the flaking is suspected to be related to movement of wood, control of relative humidity may be important; in such cases it is best to seek advice from a conservator. Flaking paint surfaces can sometimes be consolidated by running a suitable consolidant in solution or emulsion under the flakes, but this should be done by an experienced person with good facilities.

Clear Finishes

The natural colours and patterns of wood can be enhanced by transparent coatings that have a 'wetting' effect, thus saturating the colours. These transparent or clear finishes are commonly defined as either lacquers or varnishes: lacquers consist of resins or gums deposited from solution; varnishes are similar but also contain drying oils. Both lacquers and varnishes may include pigments or dyes to modify the colour of the surface — they differ from paints only in being transparent.

Characterizing old varnishes and lacquers is very difficult because, over the centuries, many different waxes, resins, dyes, and oils have been blended and cooked in innumerable combinations to produce coloured and colourless transparent finishes. The most common gloss finish on fine furniture from the 19th-century is French polish, which consists of multiple layers of shellac applied by rubbing with a cloth. Although the use of shellac is often assumed to have been universal from the 19th century onward, many other natural resins were also used. The second most common is linseed oil varnish.

Varnishes and lacquers form a complete film on wooden objects, and are thus susceptible to cracking and loosening as the wood expands and contracts. Exposure to light leads to slow and insidious degradation that eventually causes the finish to turn yellow, crack, and become loose. Water produces rapid and obvious damage. It is therefore important to avoid spilling drinks or overwatering plant pots on horizontal lacquered or varnished surfaces. Likewise, wet mopping floors or dampness rising through stone floors can create problems for the feet and legs of furniture finished in this manner.

Intact lacquered or varnished surfaces are quite durable, and can be cleaned in the same way as painted surfaces. However, it is always a good idea to test different areas before cleaning the entire object; highly degraded surfaces are likely to be more soluble than intact surfaces and solubility can also vary widely between original and repaired surfaces (and past interventions may be well hidden).

As with painted surfaces, care must be taken when handling objects with loose or flaking varnish and lacquer. For treatment of objects in this condition it is best to consult a conservator. In some cases it may be possible to re-adhere lacquers and varnishes. French-polished objects can sometimes be repolished, thus reflowing the original finish and re-establishing a shiny intact surface. Some post World War I finishes are resoluble in much the same way, depending upon condition, but finding the correct solvent combination requires testing.

Oils

Drying or non-drying oils can be applied to wooden objects to saturate the colours and to add a measure of protection. The most common of the traditional finishes in the West was linseed oil, but tung oil (once called 'china wood' oil) was also used, although more so in the Orient. Linseed oil is inexpensive, needs no complicated equipment to apply, offers reasonable protection to the surface, and provides a lovely yellow colour to light woods — although in time it turns darker woods almost black. Tung oil serves the same purposes, but without the dramatic colour changes. A wide range of other drying oils has recently become available.

Re-applying linseed oil to furniture originally finished with it was, and still is, a traditional method of care. Where there is no doubt that furniture was originally finished with linseed oil, continued use might be acceptable. Unfortunately, much old furniture that was not originally finished with linseed oil has been darkened and disfigured by ill-advised application; it is often seen poorly applied and thickly puddled, especially in cracks and low areas and around hardware.

Linseed and other similar drying oils can become chemically changed over time by a process called cross-linking. This lowers their solubility and can make them very difficult to remove. Treatment of such surfaces should be limited to the damp cleaning outlined above, or to cleaning with mineral spirits. If more extreme cleaning is required, consult a conservator.

Application of oils or oil mixtures to museum wooden objects is not recommended. Although there are many furniture restorers' nostrums, including mixtures of turpentine, linseed oil, vinegar, etc., these usually come with advice 'to apply two parts and rub off three parts'. This is akin to saying 'don't put any of this material on the surface', which is good advice.

Waxes

The bare surfaces of some wooden objects are treated with wax after completion, and these are usually maintained during use with further coats of wax. A wide range of waxes (from hard materials such as carnauba to soft ones such as beeswax) can be used. Wax coatings are also commonly applied over existing furniture finishes such as French polish, varnish, and oil finishes.

Wax coatings that have built up around hardware and other less accessible areas can be removed with a pointed wooden stick. Old wax can be made more soluble by soaking it with mineral spirits. If the whole surface of the piece has been heavily waxed, this method can be used to clean the entire object. When removing old wax with mineral spirits, follow the procedures outlined previously: test the procedure on a small unobtrusive area of the object and take adequate precautions with ventilation and handling of the solvent. Cleaning will be more effective if the hardware can be removed.

Rewaxing should be done with a soft, lint-free cloth, using a furniture paste wax that is free from colorants and perfumes. Apply the wax thinly and evenly, and rub it in well. After the wax has dried to a matte appearance, buff it vigorously with a clean cloth making sure to work well into less accessible areas. Wax polishing should not be done frequently; a thorough waxing will last for many years with only an occasional buff with a pure cotton cloth.

Summary

A variety of materials have been used to protect the surface of wooden objects, and to enhance and modify their appearance. Surfaces of furniture often show a great deal of previous intervention from the cleaning, polishing, and refinishing they have received over the years. Before cleaning a coated wooden surface it is necessary to determine what the coating is, whether or not it is stable, if it has been modified or refinished, and what the effect of the cleaning technique will be. Effective cleaning and presentation of an acceptable appearance can often be as simple as damp dusting followed by buffing, complemented with careful infrequent waxing.

Suppliers

Paste waxes, polishing cloths, and mineral spirits:

local hardware stores (be cautious of special products made for care of furniture; if in doubt, check with a conservator)

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Copies are also available in French.

Le présent texte est également publié en français.

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