



TECH TALK

This issue: Conserving Sports Equipment



Care of Sports Memorabilia by Paul Storch

Over the past few years, I have had a number of inquiries from collectors regarding the long-term preservation of sports memorabilia. Signed baseballs and signed footballs, for instance, are especially popular items, but in fact you may encounter many kinds of objects and materials. The goal of this article is to serve as a brief introduction to the main types of materials you might encounter in a sports memorabilia collection, the problems you might have with those materials, and some solutions to those problems. If you know the background of the materials and the problems, you'll be able to ask more informed questions when you seek assistance from a professional conservator.

Common Materials

Memorabilia collections can contain leather, textiles, metal, plastics, paper and various colorants such as dyes, inks and paints. This article will not cover paper-based collections items such as baseball and other kinds of collectors' cards, since those materials have been addressed in other Tech Talk articles.

Leather

Leather is used in various forms and preparations for sports equipment. For leather to be useful in sports, it must be durable and water resistant. To achieve those properties, the raw hide must be treated with various chemicals known as tanning agents. Baseball gloves, footballs and leather padding are generally manufactured from vegetable- or combination-tanned cattlehide leather that is embossed and printed with graining patterns. The better grades of baseballs are made from alum-tanned cattlehide or horsehide.

Vegetable tanning is also used where flexibility and water resistance are required. Mineral tanning agents such as alum impart durability but do not have great water resistance. The surface colors of those leathers tend to be lighter, such as the familiar white baseball.

Conditions of leather equipment can vary depending on several factors: the original quality of the material, the amount of use to which it was

subjected, the level of care it was given by the owner, and the subsequent storage or exhibit conditions to which it was exposed. Note that these considerations also apply to any other material, but some problematic conditions apply specifically to leather objects, such as surface abrasions, tears, distortion of the original shape, excessive dryness and, less commonly, excessive wetness, mold, insect infestation, and fading of dyes and colorants.

A condition that might be encountered in late 19th-century equipment is called "red-rot." This is caused by excessive acidity in the leather, and is evidenced by



Leather baseball mitt, excellent condition. The interior was supported with inert polyethylene foam strips.

Editor's note: TECH TALK is a bimonthly column for offering technical assistance on management, preservation, and conservation matters that affect historical societies and museums of all sizes and interests.

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All photographs in this Tech Talk were taken by staff members of the John and Martha Daniels Objects Conservation Laboratory.



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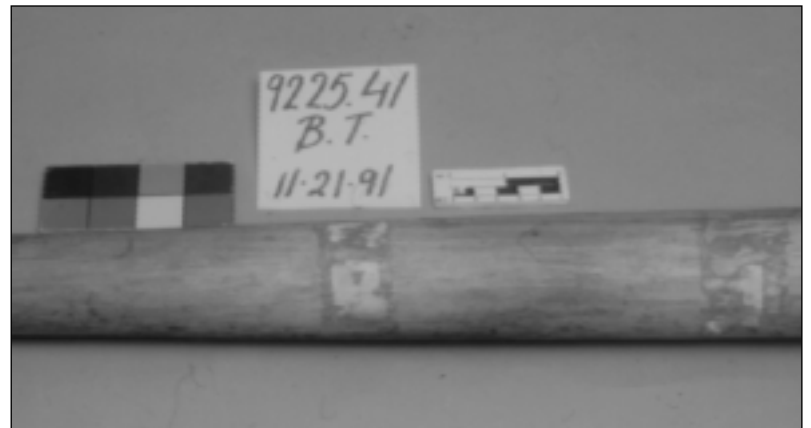


Wooden skis, showing thick vegetable-tanned leather straps.

loss of the grain layer (smooth surface), a reddish-orange color, powdering of the exposed surfaces, and darkening in contact with water. Leathers in this condition must be handled very carefully or irreversible damage will occur.

Wood

Wood occurs in many familiar forms in the sports equipment arsenal, such as baseball bats, hockey sticks and curling broom handles. For the most part, durable hardwoods are used, as these resist impact, water and other factors that can deteriorate

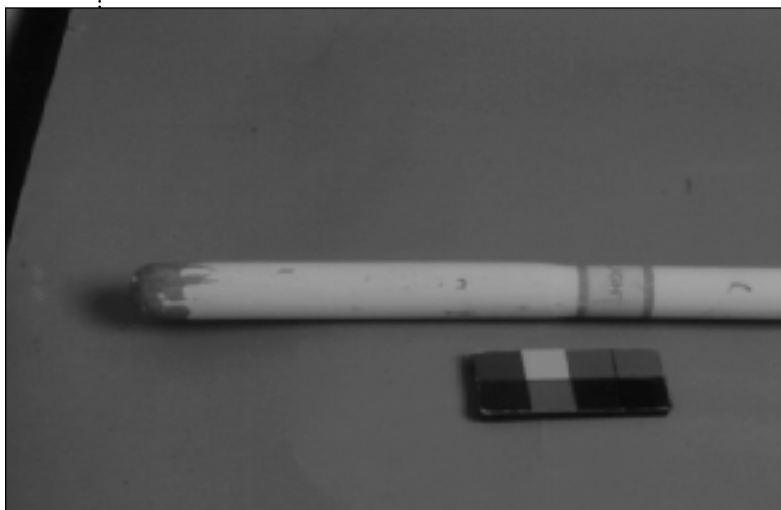


Baseball bat, showing adhesive tape residue from improper repair.

can show how the object was used; they can often be highly idiosyncratic to one individual, and therefore very informative. Interventive treatment could potentially erase that type of unique information.

Metals and Plastics

Metals and plastics are less vulnerable to breakage and the common deterioration factors to which natural organic materials are prone. These two materials have been used in more recent sports equipment, so collectable items composed of them will not be very old. Proper handling, display and storage will minimize damage in the future. Aluminum and its alloys, which are engineered for lightness, durability and corrosion resistance, are commonly used.



End of the handle of a curling broom, showing paint loss caused by use during play.



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After removal of tape residue on the bat (photo previous page), this crack was not repaired or filled.

Plastics include high-impact polystyrene and high-density polyethylene and polypropylene. Plastics are affected by long-term exposure to light and heat. They can be particularly affected if the quality of the plastic was poor when it was manufactured. There is not much that can be done for an item or material that is subject to “inherent vice,”—its natural tendency to deteriorate—other than proper handling and stable storage conditions.

Textiles

Textiles, objects composed of both natural and synthetic woven fibers, can be included in sports objects collections. Textile objects may include painted bed sheets that were used as make-shift banners, pennants,

T-shirts, uniforms and caps. Textiles are particularly difficult objects to display and preserve because they are easily damaged by materials used for their display, handling and the environment. For instance, textiles are not usually self-supporting objects that can simply be placed on a shelf; they need some kind of special stand or case.

All light is harmful to textiles. Light, both visible and ultraviolet, not only fades dyes but also degrades fibers. The damage to textiles from light is cumulative. The choice of display materials and mounting methods also have significant effects on the preservation of textiles. Proper storage is the most important action that you can take to prevent damage and to preserve a textile object. For mounting, framing and storage methods, seek the advice of a professional textile conservator.

The choice of storage materials is crucial for long-term preservation of most objects, including sports memorabilia; unbuffered acid-free paper and board materials are preferred. Store textile artifacts so that they are protected from soil, crushing and creasing.

SUMMARY

In this article I have touched on the main materials and problems with common sports objects. It should serve as a starting point for further inquiry regarding the specific problems of unique objects. In the short term, it should answer immediate questions about how to handle, display and store such objects to minimize damage and deterioration, and I hope it can serve as a guide and introduction to their long-term safekeeping and preservation.

I cannot stress strongly enough that an experienced conservator should be consulted if you have questions concerning the conservation treatment of the objects in your collection. Taking advice from dealers, collectors and popular preservation “recipes” can oftentimes lead to irreversible and costly damage to a valuable object. A proactive approach is usually best.

Author’s note: I would like to thank Deborah Bede, MHS Textile and Costume Conservator, for providing information about caring for textile sports objects.



Hockey helmet, donated by former Governor Wendell Anderson, who wore it while playing amateur hockey. The adhesive tape was left on the chin strap as evidence of use.



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Recommendations

The following recommendations are basic and simple to apply, but can go a long way toward giving your sports memorabilia collections a long life.

Material	Handling	Display	Storage
Leather	work with clean hands or latex gloves; avoid cleaners, dressings and “preservative”	internal supports; low light; 40-50% RH	same as for display; use unbuffered archival tissues and paper products; dark storage
Wood	work with clean hands; avoid damaged and flaking painted areas; avoid cleaners and “preservative” coatings	low light levels; RH 40-50%; avoid heat above 72 deg. F	same as for display; use buffered archival tissues and paper products; dark storage
Metals	use latex gloves; avoid cleaners and “preservative” coatings	avoid contact with acidic and corrosive materials	same as for display
Plastics	work with clean hands or latex gloves; avoid cleaners and “preservative” coatings	low light levels; 40-50% RH; temperature not to exceed 72° F	same as for display; dark storage
Textiles	work with clean hands; fully support objects when moving	low light levels; 40-50% RH; properly designed mounts and supports; protect from dust accumulation	same as for display; dark storage; unbuffered acid free paper and board materials; protect from dust, crushing and creasing
Paints, inks & dyes	work with clean hands if areas are stable; avoid handling if at all possible	minimize temperature and RH fluctuations; low light levels; no sunlight or fluorescent lights	same as for other materials of which the decoration is a component

For a list of members of the American Institute of Conservation (AIC) who consider themselves qualified in various specialized fields, call (202) 452-9545.

Glossary

RH: Relative humidity. The ratio of the quantity of water vapor in the atmosphere to the quantity of water vapor that would saturate the atmosphere at the existing temperature.

UV: Ultraviolet radiation. Roughly, that part of the electromagnetic spectrum from 200 to 400 nanometers (millionths of a meter). This is the most energetic part of the light spectrum; exposure of organic objects to it can lead to fading and other permanent physical/chemical changes.

Reference: *Environmental Guidelines for the Storage of Paper Records*, NISO Technical Report Series: TR01-1995. Bethesda, MD: NISO Press.