

COMMERCIAL DRY CLEANING OF MUSEUM TEXTILES

Textile Laboratory Staff
Canadian Conservation Institute

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Museum textiles need special attention when being dry cleaned, unlike personal clothing. The following guidelines will help in arranging for the safest dry cleaning for museum textiles.

1. Know what to dry clean.

Only very sturdy museum textiles can be safely dry cleaned. Because commercial dry cleaning involves a mechanical tumbling action similar to machine washing and drying, few museum textiles can withstand the process. To determine if a textile can be dry cleaned, thoroughly inspect it to ensure that the textile does not have threadbare areas, tears, torn seams or fragile linings and attachments. For example, if a piece has dry and cracked leather attachments that cannot be removed, dry cleaning will only worsen the cracking. On the other hand, if the leather is in reasonably good condition, it should be able to withstand the process.

2. Cleanliness is not as important as the safety of the textile.

Naturally, commercial dry cleaners work to produce the cleanest possible article. With historic textiles, however, what is most important is that they are not damaged. Do not expect old, oxidized stains to be removed by dry cleaning. Only overall cleaning can be achieved. It is essential to find a cooperative commercial dry cleaner who will agree to clean museum pieces according to particular specifications, and who will take the responsibility, care and time necessary to clean and handle artifacts safely. This special attention may be more expensive than routine dry cleaning.

Dry cleaning involves tumbling garments in a bath of dry cleaning solvent, extracting the solvent by spinning, and

then tumble drying. Some establishments use one machine for the entire dry cleaning process; others use a separate machine for tumble drying. Either way, to clean a museum textile, the dry cleaner must be able to operate the machines manually in order to control conditions during cleaning.

3. Control of solvents, temperature and detergent concentration is essential.

Solvents used in commercial dry cleaning are acceptable for cleaning most museum pieces. Perchloroethylene (tetrachloroethylene) is most often used because it dissolves many common stains such as oil and grease.

Dry cleaners usually add water and a surfactant (detergent) - called a charge in the trade - to the dry cleaning solvent. These help remove watersoluble stains caused by sugars, salts and proteins such as blood. However, in dry cleaning museum textiles, water should not be added to the dry cleaning bath. Water can cause fibre breakage and wrinkles. The cleaning activity of the charge in the dry cleaning bath is affected by solvent temperature, detergent concentration and type of detergent. Commercial cleaners use detergent concentrations of up to 2.5 per cent on personal clothing, but 1 per cent, or even 0.5 per cent, is adequate for museum textiles. The temperature of the dry cleaning bath should not exceed 25 degrees C [Editor's note: 77 degrees F].

4. Limit cleaning time and load size.

Dry cleaners should be asked to limit the time a museum textile is in a machine. Ideally only one piece should be cleaned per cycle. The mechanical action of the dry cleaning machine, or the movement of

the textiles through the solvent in the basket, produces friction on the fabric and may result in fabric chafing.

Dry cleaners usually classify textiles into three groups:

- 1) *sturdy garments* such as raincoats, winter coats, pants and jackets, which require a cleaning cycle of about 10 minutes;
- 2) *fragile garments* such as dresses, sweaters, blouses and silks, which need about 5 minutes; and
- 3) *very fragile and unstable garments* such as those made of angora, rabbit and dog hair, which should have a cleaning cycle of not more than 2 minutes.

Museum textiles must be cleaned even more gently than this latter category.

For a museum textile, a typical dry cleaning cycle should have the following steps:

- 1) Place the textile in a stationary machine. Add pre-washed, soft, white, wool rags until the machine is one-third full, to soften the fall of the textile as it tumbles in the machine.
- 2) Fill the machine to the highest level with dry cleaning fluid (which includes the surfactant).
- 3) Rotate the machine for 1 minute, then stop it for 2 minutes.
- 4) Drain the dry cleaning fluid from the machine without using the extraction cycle.
- 5) To rinse the textile, repeat steps 2 to 4 with clean fluid. Detergent should not be added to the rinse cycle.
- 6) Again, drain the machine for about 2 or 3 minutes with the help of only the drain and pump.

- 7) Turn on the extraction cycle for 1 minute.
- 8) Dry the museum textile at a temperature of not more than 50 degrees C [Editor's note: 122 degrees F]. It might be necessary to add more clean white rags to the load during drying.

5. How to prepare a museum textile for dry cleaning.

When a cooperative dry cleaner has agreed to clean artifacts to your specifications, show the cleaner the textile to be cleaned. Ask the dry cleaner to show you the dry cleaning machine and to explain its functions and controls. Check the colour of the dry cleaning fluid in the sight glass. If detergent has been added the fluid should be slightly yellow/amber, otherwise it should be colourless. Together with the dry cleaner, test all colours of the textile and its attachments (e.g., buttons) with the dry cleaning fluid. If you both agree that the textile and attachments will withstand dry cleaning, take the artifact back to the museum for the following preparations:

- i) stitch a white or colourfast fabric (e.g., cotton knit or sheeting fabric) over all hooks, clips, buttons, buckles, metallic or other trimmings to avoid tearing and snagging the fabric during cleaning;
- ii) protect weak areas in the fabric (e.g., moth holes) by basting a piece of white or colourfast fabric (e.g., cotton knit or sheeting fabric) through strong fabric around the weak area; and
- iii) clean tarnished metal (see CCI Notes 9/3 *The Cleaning, Polishing and Protective Waxing of Brass and Copper Objects*) before dry cleaning because the solvents may dissolve the tarnish and transfer it to the textile.

When the artifact is fully prepared for dry cleaning, make an appointment with the dry cleaner. Arrange for a day when there is enough time to concentrate totally on the museum piece; mornings are often

best, since the dry cleaning fluid has not yet heated up from use. Stay with the dry cleaner throughout the cleaning process and ask questions if you are unsure what the dry cleaner is doing.

Editor's note: The Oklahoma Field Advisory Service, in cooperation with the Oklahoma Museums Association, offers a lending library of materials on museum collections care. Titles relating to textile preservation include:

MacLeish, A. Bruce. The Care of Antiques and Historical Collections. 2nd ed., rev. Nashville: AASLH, 1985.

Mailand, Harold F. Considerations for the Care of Textiles and Costumes. 3rd ed., rev. Indianapolis: Indianapolis Museum of Art, 1980.

Thompson, John M.A., ed. Manual of Curatorship: A Guide to Museum Practice. rev. ed. Boston: Butterworths, 1986.

Borrowers may obtain these materials through their local public libraries and the Otis interlibrary loan system of the Oklahoma Department of Libraries.

The Field Advisory Service also offers on-site consultations for technical assistance with collections care. Contact Cherie Cook, Field Services Coordinator, Oklahoma Historical Society, 405/521-2491.