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SERVICE ENGINEERING ASSOCIATES INC ATLANTA GA
CARPET MAINTENANCE HANDBOOK. (U)
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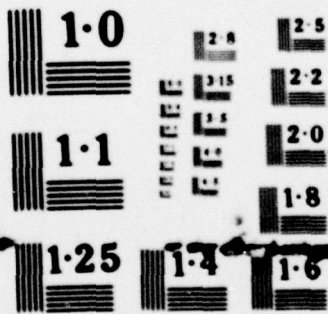
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CARPET MAINTENANCE HANDBOOK

SERVICE ENGINEERING ASSOCIATES, INC
3980 PEACHTREE ROAD
ATLANTA, GEORGIA 30319

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PREFACE

This report covers a study conducted by Service Engineering Associates, Inc. for the Air Force Engineering and Services Center (AFESC), Tyndall AFB, Florida.

This report is designed to assist custodial personnel at all levels of command and responsibility in developing a comprehensive carpet maintenance program.

This report, the results of work performed during the period Sep 1978 to Jun 1979, was submitted by Service Engineering Associates, Inc. to AFESC on 6 Jul 1979. The base document for this report was prepared by Service Engineering Associates, Inc. The document was reviewed and revised by personnel of the Maintenance Division, Directorate of Operations and Maintenance, Air Force Engineering and Services Center. The Service Engineering Associates, Inc. program manager was Richard H. Roesel. The AFESC project officer was Robert H. Marcy.

This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS it will be available to the general public, including foreign nations.

This report has been reviewed and is approved for publication.

Robert H. Marcy
ROBERT H. MARCY
Project Officer

Earle R. Cole
EARLE R. COLE, Colonel, USAF
Director, Operations and
Maintenance

Bernard C. Meredith
BERNARD C. MEREDITH
Technical Director

Clifton D. Wright
CLIFTON D. WRIGHT, Brig General,
USAF
Commander

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1. INTRODUCTION AND SUMMARY

1.1. Background.

The increasing installation of carpeting in Air Force facilities has resulted in the need for comprehensive guidance regarding carpet maintenance and repair. The information contained in this report is applicable in general to all types of commercial carpet currently being installed. For details on these subjects addressed below, see the appropriate chapter in this manual.

1.2. Maintenance and Type of Carpet.

Carpet maintenance procedures do not depend on the type of carpet or method of installation; however, certain types of carpet are more likely to be damaged by incorrectly performed maintenance tasks. Specifically, wool carpet and carpet with jute or animal fiber backing will shrink if excessive moisture is used during shampooing.

1.3. Soil Prevention.

The cost of carpet maintenance can be significantly reduced and the usable life of the carpet can be extended if practical steps are taken to reduce the soiling of the carpet.

- a. Exterior walkways, steps, and landings near entrances should be kept clean.
- b. Mats should be placed in entries to entrap soil from the bottoms of shoes.
- c. Good housekeeping habits should be practiced by building occupants.
- d. Areas subject to heavy soiling should be treated with a soil retardant.

1.4. Maintenance and Repair Program.

A carpet maintenance and repair program should achieve the following results:

- a. Provide an acceptable appearance.
- b. Eliminate objectionable odor.
- c. Reduce static electricity when more than annoying.
- d. Prevent excessive wear.
- e. Eliminate hazards.

1.5. Policing.

The removal of obvious surface litter such as paper clips, rubber bands, small bits of paper, and light soil from carpet is commonly referred to as policing. The primary objective of policing is to maintain an acceptable appearance of carpet between scheduled vacuumings. Policing can be done with a mechanical-type carpet sweeper, a tank or canister vacuum, an upright carpet vacuum, or by hand.

Whether performed by the occupants of an area or a custodial work force, policing can significantly extend the time period between regular vacuumings.

1.6. Routine Vacuuming.

Routine vacuuming is the primary method of carpet maintenance. The purpose is to return the surface of the carpet to an acceptable appearance and to remove a portion of soil and grit embedded among the carpet fibers. Embedded soil and grit are the primary causes of carpet wear. Carpet vacuuming should only be accomplished using a carpet vacuum with a rotating brush.

The frequency of performing routine vacuuming will vary from daily to weekly depending on the soiling of the carpet, the color and pattern of the carpet, the amount of traffic, the policing efforts provided by occupants, and the desired appearance.

1.7. File Lifting (Heavy-Duty Vacuuming).

File lifting refers to the use of a powerful vacuum cleaner to remove deeply embedded soil and grit from the carpet pile and to restore the resiliency of the carpet pile. File lifting should be performed about once for every one hundred vacuumings and before and after all carpet shampooings. File lifter vacuum cleaners have two motors: one for powering the vacuum and another for powering the cylindrical brush.

1.8. Shampooing.

Carpet shampooing is the process of using a chemical cleaning agent and mechanical action to remove soil which cannot be removed by vacuuming.

There are two basic types of carpet shampooing:

a. Surface brightening is any shampooing process that does not penetrate into the carpet but primarily improves the appearance of the carpet without removing embedded soil from within the carpet pile.

b. Wet scrubbing and extraction is the application of a liquid cleaning agent, scrubbing the cleaning agent into the carpet pile, and rinsing and removing soil and moisture from the carpet by rinsing and vacuuming.

These basic types can be further defined according to:

- a. The type of cleaning agent used.
- b. The method of application of the cleaning agent.
- c. The method of providing mechanical action.
- d. The method of removing loosened soil and excess cleaning agent.

The most effective shampooing program usually involves a combination of surface brightening and wet scrubbing and rinsing. Surface brightening should be performed whenever the appearance of the carpet is unacceptable and cannot be improved by regular or heavy-duty vacuuming. Wet scrubbing and rinsing should be performed once for every three surface brightenings.

1.9. Stain Removal.

Carpet stain removal refers to the removal of stains from the carpet pile.

Due to the almost infinite variation in the type of carpet stains, a specific routine must be used to identify and remove carpet stains.

Commercially available stain removal kits include a wide variety of chemicals with specific instructions for the identification and removal of stains.

Attempt to remove stains as soon as possible because fresh stains are easier to remove.

The removal of carpet stains should be done as follows:

- a. The worker performing vacuuming of carpet should attempt to discover any staining of carpet and identify the type of stain.
- b. The worker performing routine vacuuming should remove all stains which can be removed by a detergent solution and a small utility brush or by an aerosol hydrocarbon unless the stain is so large that its removal requires significant time.
- c. Any stain which cannot be removed in accordance with the above paragraph should be handled by a worker thoroughly trained in the removal of carpet stains.

1.10. Static Electricity.

There are no easy methods of eliminating static electricity accumulation in carpet short of replacing the carpet with carpet having a higher electrical conductivity. However, accumulated static electricity can be dissipated to some extent by:

- a. Increasing the relative humidity of the room's atmosphere.
- b. By increasing the moisture content of the carpet.
- c. Chemically increasing the electrical conductivity of the carpet.

1.11. Repair.

Repair of damaged carpet usually requires special equipment and skill and may require that the carpet be removed from the facility. However, minor tears, rips, and unraveling can be repaired with relative ease.

2. REDUCTION OF SOILING

It is wiser to reduce the soiling of carpet than to continually remove soiling.

2.1. Walkways, Steps, and Landings.

Walkways, steps, and landings adjacent to building entrances should be kept free of soil, snow, ice, and water. This requires regularly scheduled sweeping of such areas and timely removal of snow and ice; however, the use of rock salt and ice-melting chemicals should be controlled.

2.2. Entrance Mats.

Entrance mats should be used to reduce the amount of soil and moisture tracked onto carpeted areas.

The types and sizes of mats used are determined by the types and quantity of soil tracked into the building.

Normally two stages of matting are required for each frequently used entrance. The first stage should be an open mesh type mat which has the capacity to trap and contain a relatively large amount of soil beneath the surface of the mat. Open mesh type matting should be emptied on a regular basis or rinsed with a neutral detergent solution when the mat's appearance becomes unacceptable.

The second stage of mat should be an absorbent mat to remove moisture. Absorbent mats should be vacuumed regularly, and shampooed or washed when their appearance becomes unacceptable.

The lengths of the mats should be sufficient to allow several steps with each foot.

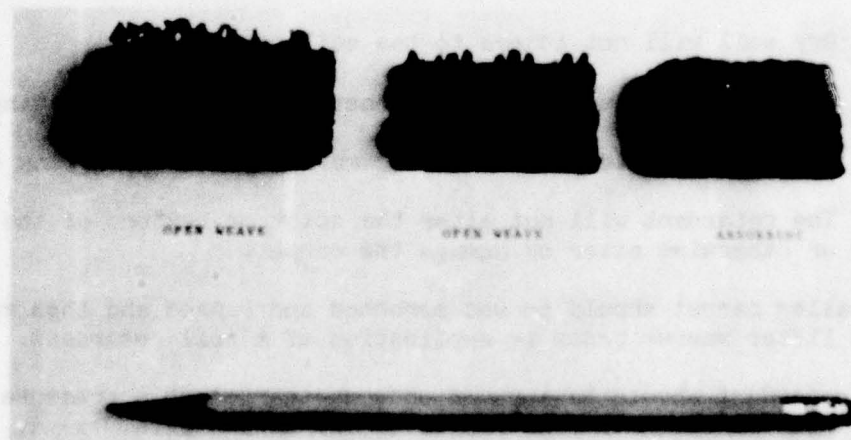


Figure 1. Entrance mats.

2.3. Good Housekeeping.

The housekeeping habits of the occupants in a carpeted area can significantly affect carpet maintenance requirements.

The frequency and quantity of spills, littering, tracked in soil, etc. is primarily influenced by people who occupy a carpeted area.

Occupants of an area should be encouraged to:

- a. Wipe their feet upon entry.
- b. Remove litter from floors.
- c. Be careful to avoid spills.
- d. Blot up spills.
- e. Report the nature of stains.

2.4. Soil Retardants.

A carpet soil retardant is a chemical treatment which can be sprayed onto carpet to reduce the adherence of soil to carpet fibers and the penetration of liquids into carpet fibers. The soil retardant can be applied to the carpet during the manufacturing process or after the carpet has been installed.

Soil retardants can significantly improve the results of vacuuming and shampooing and should be applied to carpet subject to heavy soiling such as carpeted dining areas, entrances, corridors, vending areas, etc.

Only a soil retardant with the following properties should be used:

- a. Dry soil will not adhere to the soil retardant.
- b. Water based liquids will not penetrate the soil retarding coating.
- c. Oil based liquids will not penetrate the soil retarding coating.
- d. The retardant will not alter the color or texture of the carpet or otherwise alter or damage the carpet.

Installed carpet should be wet scrubbed and rinsed and then vacuumed with a pile lifter vacuum prior to application of a soil retardant.

The retardant should be sprayed onto the carpet at a pressure of at least 30 psi for adequate penetration of the carpet pile.

The retardant must be periodically reapplied to traffic patterns and to areas where the retardant has been dissolved by certain spills.

Some carpet shampoos contain a soil retardant; however, these are not as effective as a direct spray application.

Whenever effective measures cannot be implemented to reduce the soiling of a carpeted area to an acceptable level, the carpet should be replaced with a type of flooring less susceptible to staining.

3. VACUUMING

3.1. Definition.

Carpet vacuuming is the routine removal of soil from carpet with a carpet vacuum cleaner. The objective of routine vacuuming is to remove soil and litter which cannot be practically removed by policing and to remove a portion of embedded grit. Wearing of carpet (damage) is primarily caused by the cutting action of abrasive soil embedded among the carpet fibers.



Figure 2. Carpet damage.

3.2. Frequency of Vacuuming.

The frequency of routine vacuuming will vary from daily to weekly and is primarily determined by:

- a. The soiling of the carpet.
- b. The traffic within the carpeted area.
- c. The policing effort of the occupants.
- d. The color and pattern of the carpet design.
- e. The desired appearance level.

For instance, a frequently used corridor subject to heavy soiling should be thoroughly vacuumed daily. This is necessary to provide the desired appearance and to prevent excessive wear to the carpet. A frequently used corridor subject to only slight soiling may need partial vacuuming daily to improve the appearance of the carpet and complete vacuuming of the carpet twice a week to prevent wear. A corridor infrequently used and subject to light soiling may need vacuuming only once a week if adequate policing is performed by the occupants of the area.

A general office area subject to frequent visitors from other areas will probably need vacuuming at least every other day and possibly daily. Private offices may need vacuuming only weekly if the office is subject to light soiling and the office occupant removes litter from the floor.

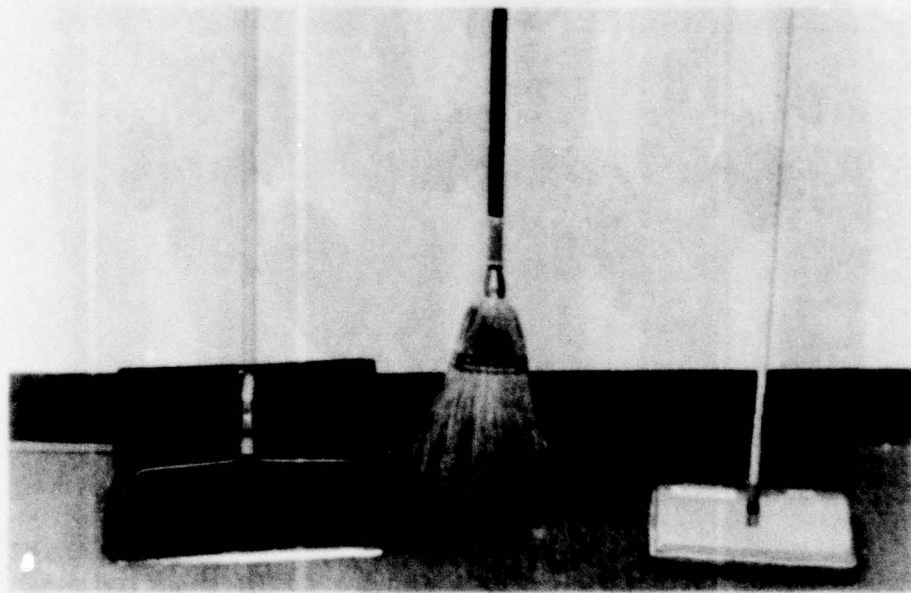


Figure 3. A small broom and dustpan or a mechanical carpet sweeper can be used to police carpeted areas.

3.3. Equipment.

Only a carpet vacuum cleaner with a rotating cylindrical brush can effectively remove embedded soil from carpet. However, areas inaccessible to carpet vacuum cleaners should be vacuumed at least monthly using a canister vacuum cleaner or accessories attachable to the carpet vacuum.

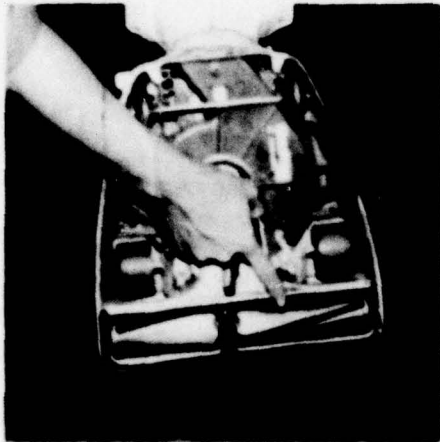


Figure 4. Upright carpet vacuum with beater brush.

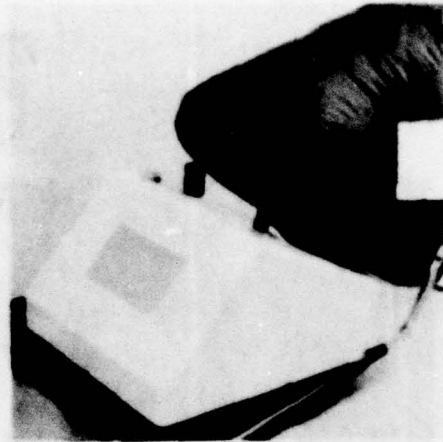


Figure 5. Wide-area carpet vacuum for large uncongested areas.

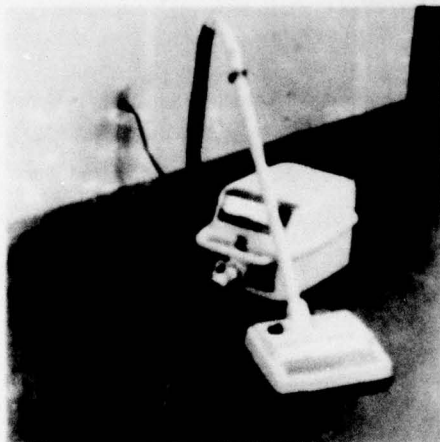


Figure 6. Combination of upright carpet vacuum and canister vacuum.



Figure 7. Canister vacuum with accessories for hard-to-reach areas.

3.4. Pile Lifting (Heavy-Duty Vacuuming).

Periodically (about once for every 100 routine vacuumings), a more powerful vacuum cleaner must be used to remove embedded soil which cannot be removed by routine vacuuming.

Additionally, pile lifting should be performed before and after shampooing.

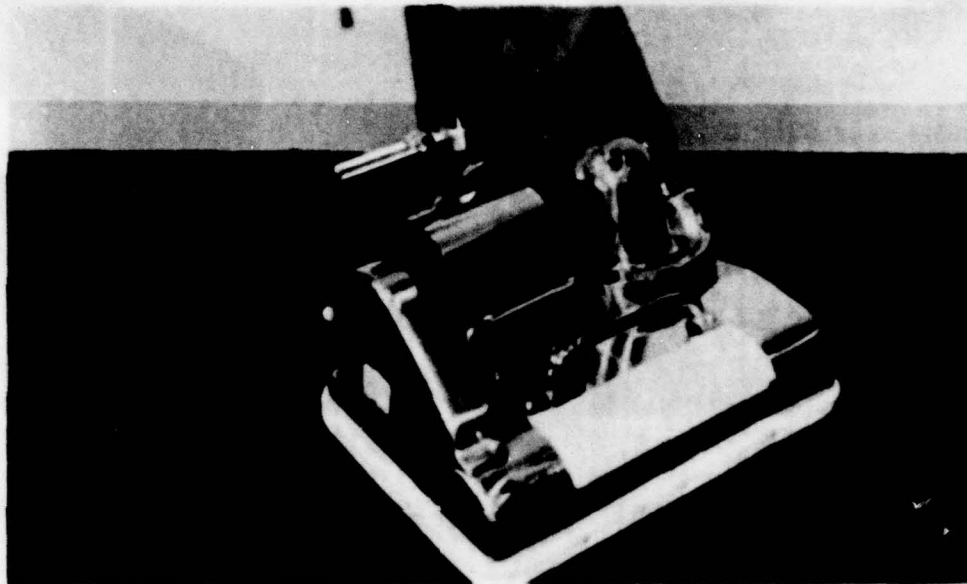


Figure 8. Pile lifter (heavy-duty vacuum cleaner).

4. SHAMPOOING

4.1. Definition.

Carpet shampooing is the process of using a chemical cleaning agent and mechanical action to remove soil which cannot be removed by vacuuming.

4.2. Recommended Program.

Although there are numerous variations of shampooing, acceptable methods can be categorized according to results.

a. Surface brightening is any shampooing process that does not penetrate into the carpet, but primarily restores the appearance of the carpet surface.

b. Scrubbing and extraction is any shampooing process consisting of 1) applying a liquid cleaning agent, 2) scrubbing the agent into the carpet pile, and 3) removing soil and moisture from the carpet by rinsing and vacuuming.

Surface brightening should be performed whenever the carpet surface has an unacceptable appearance and cannot be restored by vacuuming. The frequency of surface brightening may vary from monthly to yearly.

Scrubbing and extraction cleaning should be performed whenever the carpet has an unacceptable odor or appearance and cannot be made acceptable by surface brightening. Scrubbing and extraction cleaning should also be performed at least once for every three surface brightenings.

4.3. Cleaning Agent (Shampoo).

The cleaning agent may be a detergent or a solvent or a combination of both. The solvent is more effective in removing oily soil. The cleaning agent should contain no soap as it would leave an oily residue which increases the rate of resoiling.

The cleaning agent, when properly diluted, should have a pH range from 8.5 to 10.0.

The cleaning agent should contain insoluble metallic oxide compounds to fill in the microscopic openings in the carpet fiber, thus reducing the rate of resoiling.

A hygroscopic compound should be included in the cleaning agent to increase the conductivity of the carpet, and allow accumulated static electricity to dissipate.

Most carpet shampoos contain optical brighteners to return the carpet to its true color.

The cleaning agent should dry into a crystalline powder to facilitate its removal. It should not turn into a sticky residue which would be hard to remove and would increase the rate of resoiling.

The cleaning agent may be applied to the carpet in one of the following ways:

- a. Foam
- b. Liquid
- c. Impregnated granules
- d. Mist

4.4. Surface Brightening.

Surface brightening is an intermediate stage of carpet maintenance primarily intended to improve the appearance of the surface of the carpet when there is not sufficient soil embedded within the carpet pile to warrant scrubbing and extraction.

Since minimum moisture is used during surface brightening, the drying period for the shampooed carpet is relatively short and the carpet is less likely to shrink.

Surface brightening is relatively inexpensive compared to scrubbing and extraction and it requires less skill to perform.

The cleaning agent can be applied to carpet as a foam, mist, or impregnated granules.

The following illustrations are acceptable methods of surface brightening.

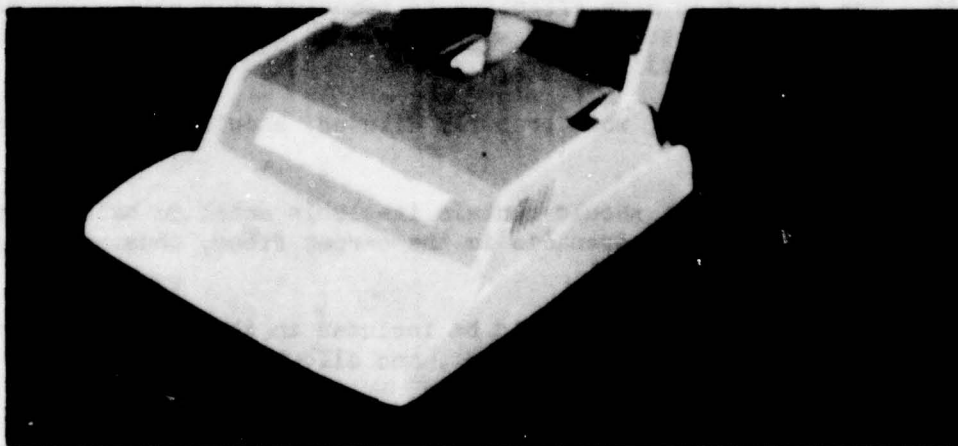


Figure 9. Surface brightening using a dry foam shampoo machine with internal foam generation and rotating cylindrical brush.

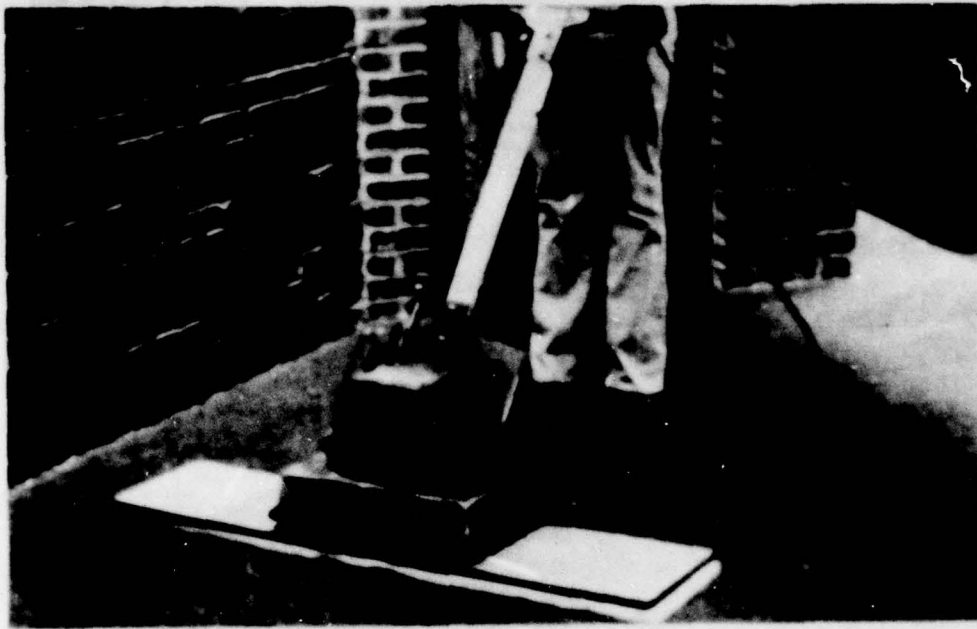


Figure 10. Surface brightening using an aerosol mist and an oscillating plate scrubbing machine.

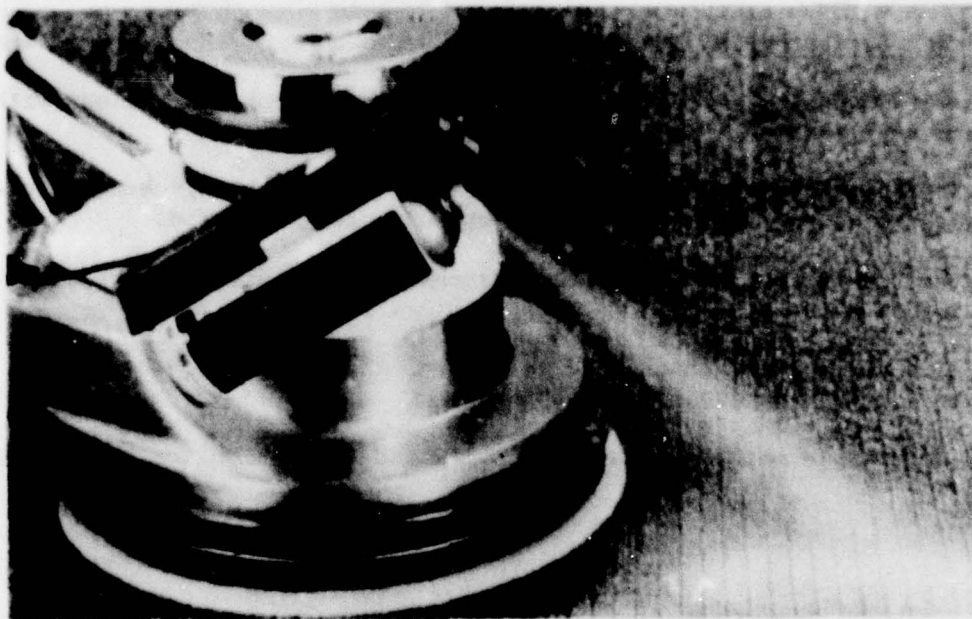


Figure 11. Surface brightening using a mist sprayer and a rotating disc scrubbing machine.

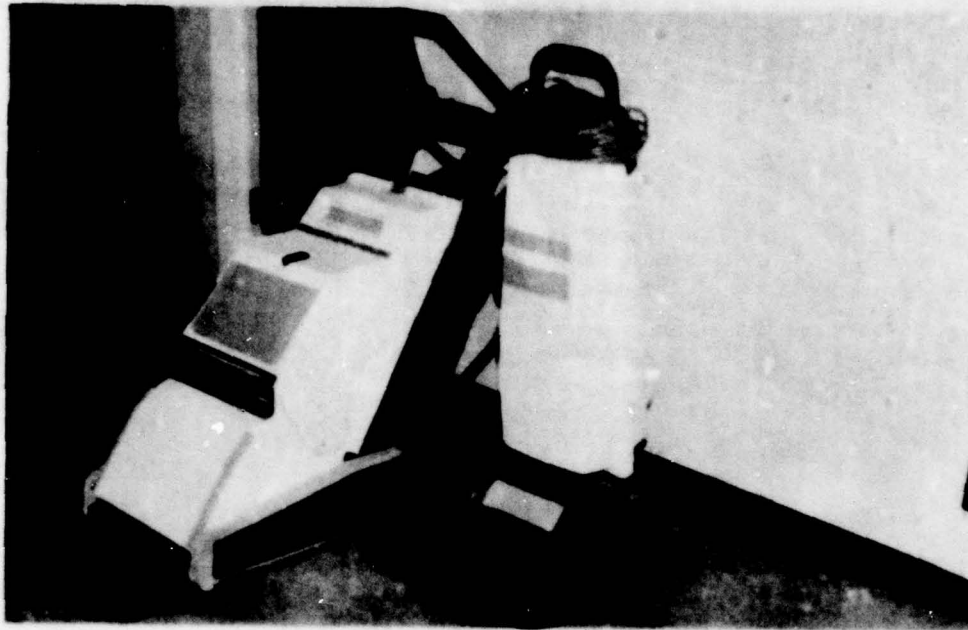


Figure 12. Surface brightening using impregnated granules.

4.5. Wet Scrubbing and Extraction.

Wet scrubbing and extraction is intended to thoroughly clean within the carpet pile as well as the surface of the carpet.

A longer drying period is required for wet scrubbing because considerable moisture remains in the carpet for a longer period.

Wet scrubbing is usually more expensive than surface brightening and requires greater skill.

A brush, rather than a pad or bonnet, should be used to provide mechanical action during wet scrubbing.

Acceptable methods of wet scrubbing and extraction are shown on page 4-5.

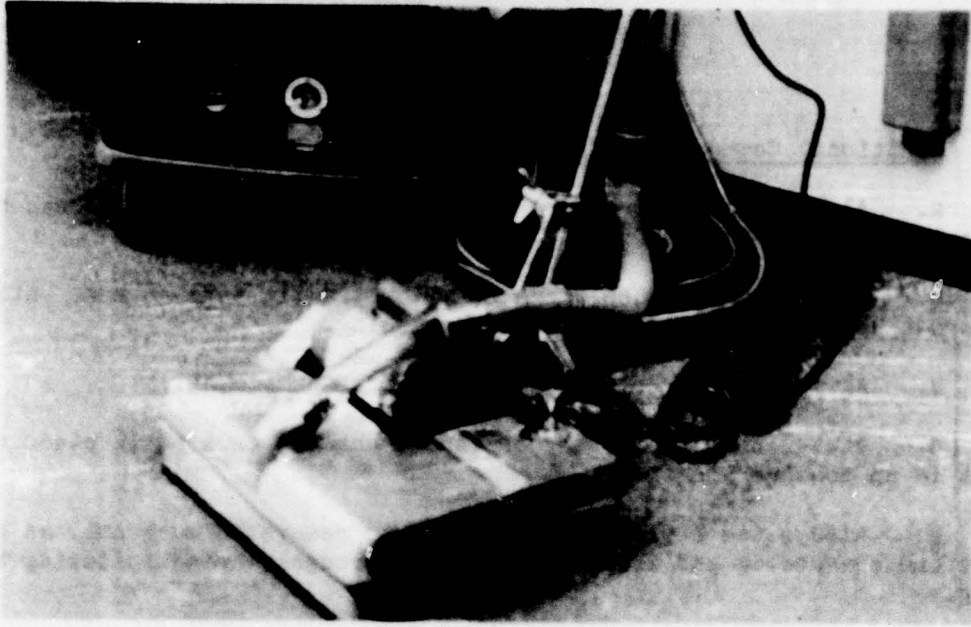


Figure 13. Wet scrubbing and extraction cleaning using a combination extractor and scrubber.

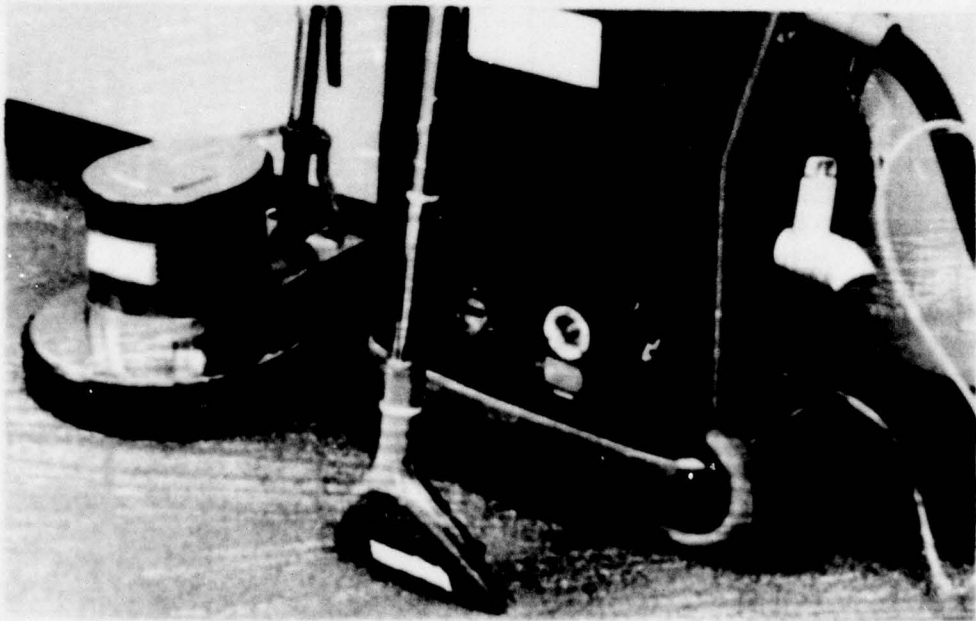


Figure 14. Wet scrubbing using a single-disc scrubbing machine and a separate extraction unit.

4.6. Additional Comments on Carpet Shampooing.

a. Always remove furniture and equipment from carpeted areas before shampooing.

b. Do not return such items or allow traffic into an area until the carpet has thoroughly dried after shampooing.

c. Always remove obvious stains before shampooing.

d. Always test the effect of carpet shampoo on a small piece of carpet in an obscure location.

e. Always use a pile lifter vacuum to remove as much soil as possible before shampooing and after carpet has thoroughly dried following shampooing.

5. STAIN REMOVAL

5.1. Definition and Responsibility.

Carpet stain removal is the process of removing spots and stains, usually caused by spills or burns, which cannot be removed by polishing or vacuuming.

Removal of carpet stains should be done as follows:

a. Carpet stains should be removed as soon as possible after their occurrence or else the stain may "set" and become more difficult to remove. Occupants of an area should blot or scrape up as much of a spill as they can as soon as possible after the spill has occurred. Additionally, if possible, they should leave a note for the custodial worker identifying the type of stain.

b. The worker performing routine vacuuming should remove all stains which can be removed with a detergent/solvent (shampoo) solution and a small utility brush or with an aerosol fluorocarbon unless the stain is so large that its removal requires significant time.

c. Any other stains should be removed by a worker thoroughly trained in the removal of carpet stains.

5.2. Stain Identification.

The type of stain should be identified to determine the correct method of removal. The following is helpful to identify a particular stain:

- a. Occupants' explanation
- b. Appearance of the stain
- c. Location
- d. Feel by touch
- e. Odor
- f. Penetration
- g. Buildup
- h. Age

5.3. Identification of Carpet Fiber.

The type of carpet fiber can be determined by burning a sample of the carpet fiber and observing the resulting odor and ash.

<u>Fiber</u>	<u>Results</u>	<u>Odor</u>
Wool	Ash -- brittle, black	Burning hair
Rayon	Ash -- soft, grey	Burning paper
Cotton	Ash -- light fluffy, white	Burning paper
Nylon	Hard bead	Hot wax
Polyester	Hard bead	Acrid
Acrylic	Hard bead	Sweet, pungent
Olefin	Hard bead	Hot tar

5.4. General Procedures.

The following general procedures should be followed in removing carpet stains:

- a. Determine type of stain.
- b. Select proper chemicals.
- c. Test on small portion of carpet to determine effect on dyes and fibers.
- d. Remove excessive buildup or crusted material with putty knife.
- e. Apply chemical agent to cloth and rub onto carpet -- do not apply directly to carpet.
- f. Blot -- avoid harsh rubbing or rough brushing which can cause fuzzing.
- g. Work from edge of spot toward center to prevent spreading of stain.
- h. Allow sufficient time for chemical to react.
- i. Remove excess chemical by blotting.
- j. Flush lightly with clear water.
- k. Blot dry or use wet/dry tank vacuum.

5.5. Chemical Agents.

The following are the basic chemical agents to be used to remove the most frequently occurring stains. Most stain removal chemicals are contained in professional carpet stain removal kits available from janitorial supply firms.

Neutral detergent
 Paint, oil, grease remover
 Volatile solvent
 Acetic acid
 Ammonia
 Enzyme detergent
 Reducing agent
 Aerosol fluorocarbon
 Rust remover
 Wet solvent

5.6. Frequently Occurring Stains.

Most stains are a combination of several classes of staining substances. For example:

<u>Stain</u>	<u>Probable Staining Substances</u>
Coffee	Tannins + Sugar + Cream
Crayon	Wax + Pigment + Dye
Salad Dressing	Oil + Tannins + Sugar + Food Dye + Chemicals

Listed below are the most frequently occurring classifications of stains and their removal procedures.

Solvent Soluble Stains

Wax	Nail Polish
Cement	Varnish
Crayon	Shoe Polish
Grease	Tar
Ballpoint or India Ink	Lipstick

1. Apply paint, oil, grease remover and blot.
2. Apply volatile solvent and blot.
3. Apply neutral detergent. Blot.
4. Apply water and blot.
5. Repeat if necessary.

Sugar and Tannin Stains

Makeup of Stains:

Sugar - Polysacharides; Caramel-like substances
Tannin - Polyphenolic dyes

Beer	Candy	Catsup	Chocolate
Coffee	Cocktails	Fruit Juices	Grass
Mustard	Soft Drinks	Tea	Wine

1. Apply neutral detergent and blot.
2. Apply acetic acid and blot.
3. Apply reducing agent, if necessary, and blot.
4. Apply water and blot.
5. Repeat if necessary.

Digestive Stains

These stains contain protein and require digester (enzyme) for complete removal.

Gravy Blood Feces Gelatin Glues Egg Vomit Milk

1. Apply enzyme detergent to stain.
DO NOT OVERWET. Blot.
2. If necessary, apply ammonia. Blot.
3. Apply water and blot.

Dyes

Furniture Dye Food Color Medicines Residual Colored Stains

1. Apply neutral detergent. Blot.
2. Apply wet solvent. Blot.
3. Apply water and blot.
4. Apply reducing agent and blot.
5. Apply water and blot.

Rust Stains

Made up primarily of iron oxide.

NOTE: If Hydrofluoric Acid (Erusticator) is used, do not allow it to touch skin or fingernails. Use rubber gloves or apply with a swab.

Oxalic Acid is slower working but much safer.

1. Apply rust remover and allow one to two minutes before blotting.
2. Repeat if necessary.
3. Apply water and blot.

Urine Stains

Makeup: A complete mixture of urea, uric acids, organic salts, pigments, etc.
Smells and becomes darker with age.

1. Add ammonia to neutral detergent and apply. Blot.
2. Apply water and blot.
3. Apply acetic acid and blot.
4. Apply water and blot.
5. Bleach may be required if carpet dyes will tolerate. (Test before using.)
6. Apply odor counteractant.

Chewing Gum

1. If chewing gum is flattened onto fibers, use a putty knife to roughen surface of gum.
2. Apply aerosol fluorocarbon to freeze gum.
3. Immediately scrape off frozen gum, using putty knife.
4. Pick up and remove pieces of gum.
5. If any stain remains, apply volatile solvent and blot.

Candle Wax

Candle wax that is on the surface of a carpet can sometimes be removed using the same technique as for chewing gum. If the wax is melted into the tufts of the carpet, the following method can be employed.

1. Place a clean towel or cloth over wax. Apply a warm iron (avoid hot settings) on top of cloth. Wax will melt into cloth.
2. Repeat if necessary.
3. To remove final traces, apply volatile solvent and blot.

6. REPAIR OF DAMAGED CARPET

6.1. Specialized Activity.

Repair of damaged carpet is a specialized activity generally requiring certain skills, supplies, and tools.

6.2. Replacement.

Whenever the size of the damaged area is very large, wholesale replacement of the carpet may be most practical. Carpet tiles can be replaced individually; however, it is often very difficult to exactly match the appearance of worn or faded carpet with new or unused carpet or carpet tiles. It may be practical to rearrange carpet tiles so that the damaged tile is relocated to an obscure area (such as beneath a desk).

6.3. Wrinkles.

When carpet installed with tackless strips becomes wrinkled, it may be necessary to reinstall the carpet, stretching it to remove the wrinkles. Properly installed carpet should be stretched one percent (1%) greater than its original length and width to compensate for compression caused by foot traffic.



Figure 15. Stretching carpet.

When carpet installed with a mastic becomes wrinkled, it may be necessary to reinstall the carpet. The old mastic should be removed from the floor by a solvent and by scraping. Before applying the new mastic, the floor should be clean and free from moisture and oily stains.

6.4. Loose Seams.

When carpet seams become loose, the carpet should be reseamed using a mastic or carpet seaming tape.

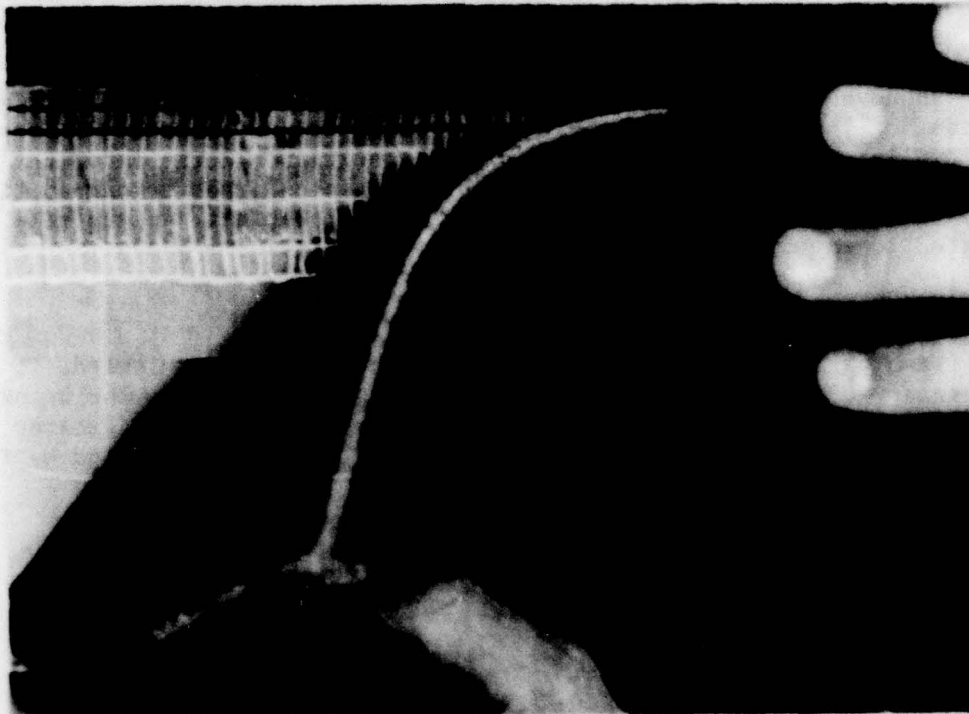


Figure 16. Reseaming.

6.5. Plugging.

Very small damaged areas of carpet can be repaired by patching or plugging. Patching or plugging consists of cutting out the damaged area of carpet and replacement with an identical size and shape piece of undamaged carpet. The plug or patch should not be circular but should coincide with the grid structure of the carpet construction to reduce the tendency to unravel. The small plug or patch can be held in place with carpet seaming tape or a mastic compound.

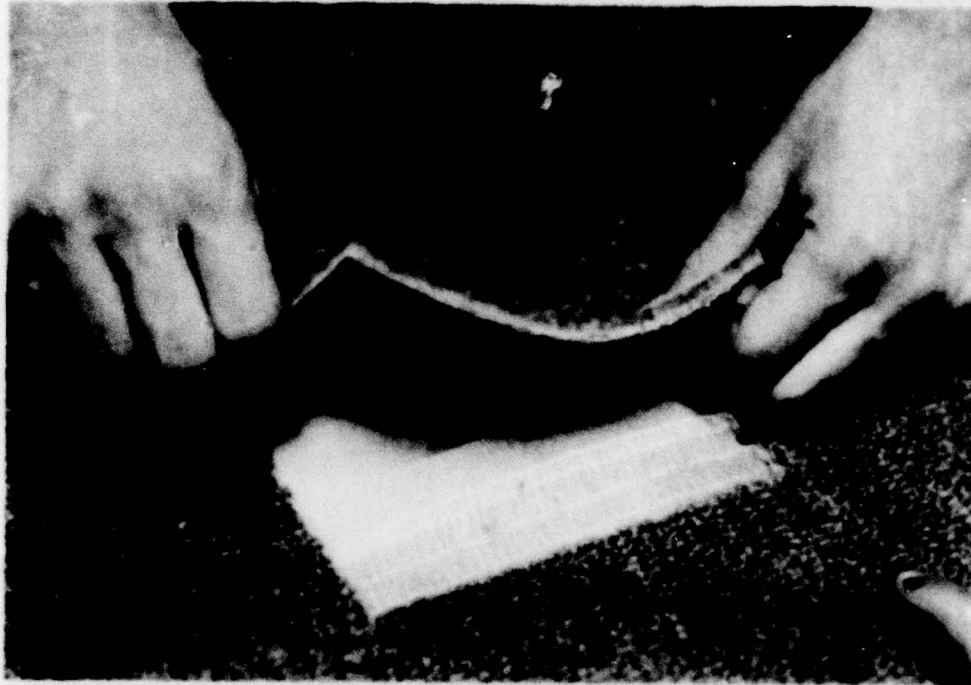


Figure 17. Plugging carpet.

6.6. Sewing.

Small rips and tears can be repaired by sewing with a curved upholstery needle and synthetic thread. This method of repair is recommended only to prevent the tear or rip from enlarging as it usually does not result in an acceptable appearance.



Figure 18. Sewing carpet.

6.7. Burns.

Small burns can be repaired by plugging or patching. If the burn is superficial (only top ends of carpet fibers are burned), steel wool or sandpaper can be used to abrade the damaged ends of the carpet fiber.



Figure 19. Repairing burned carpet.

6.8. Sprouts.

Loose fibers (sprouts) should be cut off to avoid further unraveling.

7. STATIC ELECTRICITY

7.1. Cause.

Static electricity in carpet is generally not harmful, but can be extremely annoying. The accumulation of static electricity is primarily determined by:

- a. The electrical conductivity of the carpet fibers.
- b. The relative humidity of the atmosphere of the carpeted room.
- c. The moisture content of the carpet pile.

7.2. Reduction.

There are no easy methods of eliminating static electricity accumulation in carpet short of replacing the carpet with carpet having a higher electrical conductivity. However, accumulated static electricity in carpet can be dissipated to some extent by:

- a. Increasing the relative humidity of the room's atmosphere.
- b. Increasing the relative humidity of the carpet pile. This can be accomplished by periodic application of a water mist from a small pump-up sprayer. Care should be taken to avoid overwetting the carpet.
- c. Increasing the electrical conductivity of the carpet by application of a hygroscopic chemical agent. The hygroscopic agent remains within the carpet pile and absorbs moisture from the atmosphere of the room. Hygroscopic agents are contained in many carpet shampoos. Also, they may be applied separately using a small pump-up sprayer. Care should be taken because some hygroscopic agents may increase the rate of resoiling of the carpet. The only method of determining the effectiveness of a hygroscopic chemical agent is to test the results on a sample of the carpet.

APPENDIX

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