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16 July 1969

COMSTS INSTRUCTION 9140.1A

From: Commander, Military Sea Transportation Service  
To: Distribution List

Subj: Maintenance of MSTS shipboard deck coverings

Encl: (1) Instructions for Cleaning and Maintenance of Various Type  
Deck Coverings Aboard MSTS Ships  
(2) Guideline Procurement Specifications for Surface Dressing  
for Magnesite Decks in MSTS Ships

1. Purpose. This Instruction furnishes methods for cleaning and  
maintaining shipboard deck coverings.

2. Cancellation. This Instruction supersedes COMSTS Instruction  
9140.1.

3. Discussion. Few materials aboard ship receive as much wear and  
cleaning as deck coverings. Rough and improper maintenance methods  
will quickly destroy the appearance and durability of these materials  
and lead to expensive replacement. Adherence to the procedures  
specified herein will improve appearance and prolong the life of deck  
coverings.

4. Action. Maintenance of shipboard deck coverings shall be in  
accordance with enclosures (1) and (2). Addressees are invited to  
recommend any additional experience-proven procedures that will en-  
hance the effectiveness of this Instruction.

T. S. KING, Jr.  
Deputy

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Authenticated:

*Chris S. Controwinski*  
CHRIS S. CONTROWINSKI  
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INSTRUCTIONS FOR CLEANING AND MAINTENANCE OF VARIOUS TYPES OF DECK  
COVERING ABOARD MSTS SHIPS

1. GENERAL PRECAUTIONS

- a. The most painstaking and careful maintenance of deck coverings may be wasted if the legs of furniture, especially chairs, and other movable pieces are not properly equipped with rubber tips to prevent scratching and denting of the deck covering surface. Replacement non-slip rubber tips are available in the Navy Supply System.
- b. Avoid dragging heavy objects across the deck.
- c. If at all possible, avoid using salt water for interior decks.
- d. Do not use an excess of water, strong alkaline soaps, strong alkalies, rough abrasives and very hot water on interior decks. On magnesite decks, harsh alkaline cleaners cause rapid surface deterioration.
- e. Never paint, varnish or shellac any deck covering.
- f. Protect decks with cover cloths during painting.
- g. Protect deck coverings during shipyard overhauls.

2. MATERIAL AND EQUIPMENT

The following principal items of material and equipment are authorized:

- a. Detergent, general purpose, water soluble (available in the Navy Supply System) shall be Type I, Specification MIL-D-16791 or the equivalent thereof. Cleaning and polishing compound, Federal Stock Number (FSN) 9Q7930-282-9699 may be used as deemed practicable. Detergent used as cleaning solution shall be mixed at the rate of two tablespoons of detergent per gallon of warm potable water. Do not use any other strongly alkaline cleaners, except as specified herein.
- b. Floor dressing for magnesite decking shall be in accordance with enclosure (2), and/or the material available in the Navy Supply System, FSN 9Q7930-281-7810 (Spec. MIL-D-16680).
- c. Floor polishing and scrubbing machines are available aboard ships having major deck maintenance problems (i.e., transports, etc.).

Enclosure (1)

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d. Floor wax. A slip-resistant water emulsion type floor wax is available in the Navy Supply System (FSN 9Q7930-274-6252 and 9Q7930-274-6253) and shall be utilized. This wax should be applied in a very thin coat and allowed to dry 30 minutes before traffic is permitted on it and before polishing. It is a self-polishing type of wax, but the gloss of even the best of this type is improved by buffing after drying.

3. VINYL, VINYL ASBESTOS AND RUBBER TILE

a. Maintenance Immediately After Installation. Excess cement shall be removed from the tile surface with paint thinner. Normal foot traffic is permitted almost immediately since no indentation will occur from this type of traffic. However, because of the solvents used in the cement, it is recommended that heavy concentrated loads such as legs of heavy furniture be left off the deck, if at all possible for as long as two weeks until the cement has completely set.

b. Routine Maintenance. Frequency of maintenance will be determined by the amount and nature of the traffic to which the area is subjected. Superfluous washing should be avoided. When necessary, it should be scrubbed with a circular brush scrubbing machine or a stiff bristle hand brush (Tampico), and the cleaning solution outlined by paragraph 2.a. A minimum amount of solution should be used to do the job. All water, cleaning solution and dirt should be removed with a mop; the deck rinsed with clean water and a clean mop. Stubborn grease and dirt may be removed with a rag moistened with paint thinner.

(1) After washing and drying, the tile may be buffed (without wax) to a velvet sheen with a buffering machine or given a coat of wax and allowed to dry without polishing. If a high gloss is desired, buff the dried wax with a polishing machine. To reduce maintenance, a deck should be rebuffed several times before rewaxing. If dirty spots that may appear in traffic lanes are promptly wiped with a damp rag and such areas immediately repolished, a complete refinishing of the deck may be deferred for a long time.

(2) If a tile requires replacement, remove it by forcing a wide blade paint scraper under it. Chip out the dried cement and clean the spot with paint solvent. Apply fresh cement with a toothed trowel (one side filed to form teeth approximately 1/8" deep x 1/8" wide and 1/8" apart). Allow the cement to become tacky and place the tile into position.

4. STATIC-CONDUCTIVE DECK COVERING IN MEDICAL OPERATING SPACES

Cleaning shall consist of scrubbing as specified in paragraph 3. Waxes, oils, or polishes should not be used. They act as electrical

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insulators and reduce the conductivity of the deck. To increase the gloss of this linoleum, lightly buff with a floor polishing machine having a fine steel wool brush.

5. MAGNESITE

a. Cleaning maintenance shall consist generally of scrubbing as specified in paragraph 3. Harsh alkaline cleaners must be avoided since they will cause a surface deterioration. Use only mild or neutral cleaners. Do not use cleaners which will create crystals, since crystals formed in the pores of the floor may exert sufficient pressure to cause spotting or chipping of the surface. Also, avoid excessive water in contact with magnesite floors for extended periods. Water will penetrate the surface, exert a leaching action and cause ultimate deterioration.

b. After some time in service, the color of the magnesite decking may fade. Do not paint to renew color. To restore color and appearance, the deck should be sanded lightly with #0 steel wool and then washed thoroughly as outlined above. Apply a floor dressing (refer paragraph 2.b. and note (1) below) to help develop a uniform color. It should be applied with a brush or rag and allowed to penetrate. A second or third application may be required in some areas that absorb rapidly. Any excess left on the surface after 10 or 15 minutes should be wiped off so that the dressing dries in the pores of the magnesite, rather than on the surface.

Note (1) - The use of CHECKIT Pen Seal (manufactured by Franklin Research Corp.) or equal, procured in accordance with enclosure (2), is authorized wherever magnesite decks are badly deteriorated. This product has proven successful in maintaining the magnesite decks of T5 tankers and troop spaces of MSTS transports. One essential feature of this surface dressing is that it will restore the magnesite decks and maintain the appearance at a nominal cost.

6. FLIGHT DECKS (applicable to T-AKVs (formerly T-CVUs))

The following procedure has been developed specifically to remove the heavy accumulations of grease on steel and wood flight decks. Wipe excess with rags and then use a cleaning solution consisting of one pint of detergent cleaner and five tablespoons of dishwashing compound, or ten tablespoons of sodium metasilicate diluted with fresh water to make 20 gallons of solution. Apply with hand scrubbers or circular floor scrubbing machines and rinse with sea water.

7. STEEL DECKS

To clean rust and stain from steel decks, prepare corrosion removing compound (Phosphoric acid base) SNSN 9G6850-270-5551 (Spec. MIL-M-10578), by adding one part of the compound to three parts of fresh water by volume. Always add the acid to water, never water to acid. Use an acid resisting steel or earthenware crock for mixing. Remove grease from deck with cleaning solution (Q7930-282-9699 (Spec. MIL-D-16791)). After degreasing wire brush surface to remove loose rust. Apply diluted rust remover liquid with a fiber brush and allow it to act on the surface for at least five minutes. Surfaces should then be rinsed with fresh water and wiped dry. In the preparation of the acid, care should be taken to protect the hands, face, and eyes. Accidental spills on the skin should be immediately flushed off with large quantities of fresh water followed by a rinse of one per cent solution of sodium bicarbonate.

8. RUGS

Rugs should be cleaned with a vacuum cleaner as frequently as required. Occasionally the rug may be cleaned with a stiff floor brush and cleaning solution (paragraph 2.a.) to brighten up its color. The brush should be dipped into the solution, shaken free of excess solution and rubbed into the rug. The cleaned portion is then wiped with dry toweling (cotton terry cloth). The rug should be allowed to dry completely before traffic is permitted. This treatment may also be utilized for localized spots of dirt and grease.

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GUIDELINE PROCUREMENT SPECIFICATIONS FOR SURFACE DRESSING FOR  
MAGNESITE DECKS IN MSTS SHIPS

The surface dressing shall be a combination of hard drying oils with synthetic resin and suitable dryer dissolved in mineral spirits, or a comparable formulation that will effectively restore or seal badly deteriorated magnesite decks without the need of waxing and buffing. It shall have the following characteristics: the total solids shall not be less than 26 per cent and shall have a viscosity of not more than .22 poises; it shall not thicken, skin, or liver in partly full containers; and it shall dry hard in less than three hours and shall set to touch in less than one hour.

Flash Point - The surface dressing shall have a Tag closed cup flash point at or below 150° F., but not less than 100° F. It shall be non-toxic and non-injurious when applied in enclosed areas under normal ventilation.

Resistance to Water, Solvent, Acid, etc. - The surface dressing shall not be affected by 72 hour contact with cold water or by  $1\frac{1}{2}$  hour contact with boiling water. It shall not be removed or discolored by alcohol or gasoline after a 24 hour contact. It shall not be damaged by contact with mineral oil for a period of 96 hours. It shall not be damaged by 96 hour contact with 33 per cent sulphuric acid. It shall not be harmed by 8 hour contact with a 3 per cent sodium hydroxide solution.

Slip Resistance - It shall be ensured that the product has been officially tested for slip resistance by an official testing group for the nation's insurance companies.