

# DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

## WD CARC SPOT PAINTING

HEADQUARTERS, DEPARTMENT OF THE ARMY  
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*This TB supercedes TB 43-0242, CARC Spot Painting, dated 1 Jan 1991*

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## SECTION I. INTRODUCTION

**1-1. Purpose.** This bulletin explains the Water Dispersible Chemical Agent Resistant Coating (WD CARC) process and provides field maintenance methods of spot painting using WD CARC.

**1-2. Scope.** This bulletin contains information on WD CARC for field maintenance personnel. It covers the reasons WD CARC is used, application procedures, safety precautions and provides NSNs for the components of the WD CARC system.

**1-3. Definition of Terms.** The following terms will be used throughout this TB:

a. CARC. Solvent-based Chemical Agent Resistant Coating, MIL-DTL-53039. A solvent-reduced topcoat that provides a surface easily decontaminated after exposure to liquid chemical agents. This topcoat may still be used on vehicles, though it does not have touch-up kits available.

b. Wash primer. A two-component organic pretreatment, DOD-P-15328D (for steel or aluminum) and MIL-C-8514C (for steel or aluminum). The wash primer is applied to a clean metal surface to prepare it for a more permanent protective primer.

c. WD Primer. A water-reducible epoxy primer, MIL-P-53030A, MIL-DTL-53030B, MIL-DTL-53022C (white, for steel and aluminum surfaces), or MIL-PRF-85582C (for steel or aluminum surfaces). Use Type II Class C2 for aviation equipment and you can use either Class C2 or N for tactical ground or support equipment. These anti-corrosive primers can be applied to pretreated metal surfaces to promote adhesion for either the solvent-based CARC or WD CARC topcoats.

d. WD CARC. Water Dispersible Chemical Agent Resistant Coating, MIL-DTL-64159, Type I and II. A water-reduced topcoat that provides a surface easily decontaminated after exposure to liquid chemical agents. Type I has a silica-based flattening agent. Type II uses a polymeric flattening agent that improves its performance properties and makes it the recommended choice over Type I when using WD CARC.

**1-4. Suggested Improvements.** You can help improve this bulletin. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 to: Commander, USAMC LOGSA, AMXLS-AM, Bldg 5307, Redstone Arsenal, AL 35898-5000.

**1-5. General.** Traditionally, Army equipment had been painted with solvent-based CARC containing high levels of Volatile Organic Compounds (VOC). Currently, the CARC inventory has only two topcoats available which offer lower VOCs and zero hazardous air pollutants (HAPs). In comparison, WD CARC has very low VOC levels. The lower the concentration—which is measured in pounds per gallon (lb/gal)—the safer it is for the environment and the Soldier. The current solvent-based one-component CARC (MIL-DTL-53039) has a Type I which has a maximum of 3.5 lb/gal of VOC and a Type II which has 1.5 lb/gal or less of VOC. WD CARC has a VOC of only about 1.8 lb/gal or less. Since the solvents used to thin CARC also contain high concentrations of VOCs, the lb/gal concentration can actually increase. On the other hand, WD CARC is thinned with deionized water, which further reduces the VOC concentration. WD CARC has many distinct attributes:

a. Compatibility. Since WD CARC is fully compatible with all existing CARC primers and topcoats, you can use it to touch up a vehicle that has been painted with CARC.

b. Flexibility. WD CARC is more flexible after application. That means fewer problems with chipping and cracking.

c. Mar resistance. WD CARC is more durable and doesn't scratch as easily as CARC. That means less time spot painting to fix scratches and scrapes.

d. Weather resistance. WD CARC is much more durable in all weather conditions. In fact, tests have shown that WD CARC can last three to five times longer than the original or first generation CARC (MIL-C-46168) which was replaced with either MIL-DTL-53039 or MIL-DTL-64159.

e. Color stability. WD CARC resists fading. So when you do have to spot paint, you won't have to worry about the colors not matching.

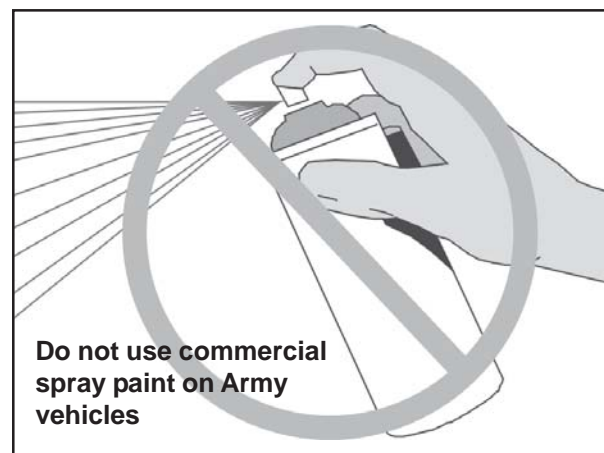
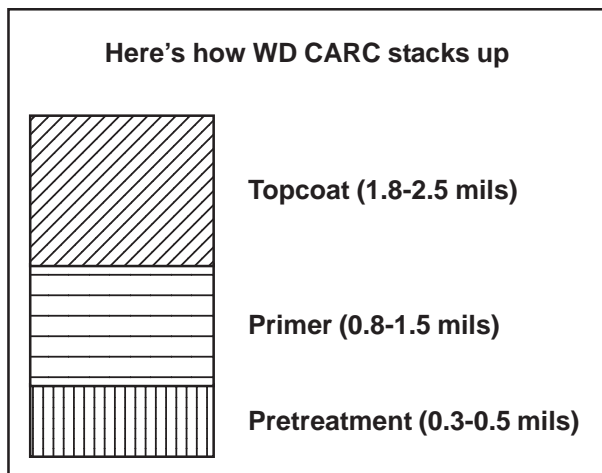
**2-2. Identification.** Most Army equipment is painted with either CARC or WD CARC and should have "CARC" stenciled near the data plate.

**2-3. Spot Painting.** When a CARC-painted surface is scraped, scratched or damaged, its resistance to chemical agents is lessened and it becomes susceptible to corrosion. Depending on the location and size of the area damaged, spot painting may be required. Vehicles or equipment painted with CARC or WD CARC should always be spot painted with CARC or WD CARC. WD CARC is fully compatible with all existing CARC primers and topcoats and is preferred for spot painting. However, solvent-based CARC (MIL-DTL-53039) can be used if you still have some on hand. One thing you should never use is a commercial off-the-shelf can of aerosol enamel or alkyd paint. Here's why:

## SECTION II. THE WD CARC SYSTEM

**2-1. The System.** The WD CARC system is a combination of pretreatments, WD primer and a WD CARC topcoat. After surface preparation and pretreatment, exteriors of vehicles are treated with a wash primer and then painted with WD primer followed by a WD CARC topcoat.

a. These paints **are not** matched to federal standard color chips. They quickly fade to a lighter shade that shows up clearly and can mark your vehicle as an enemy target.

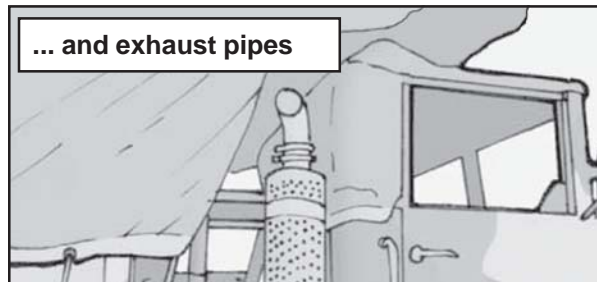
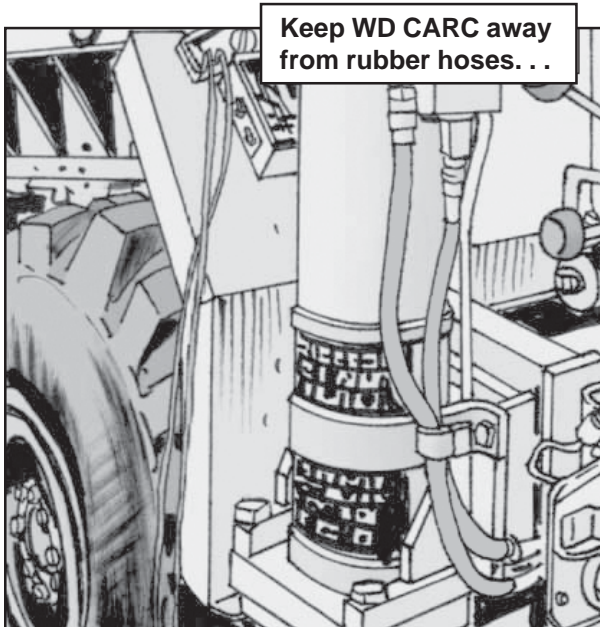


b. They do not offer any signature reduction capabilities such as infrared reflectivity. Again, they can leave a spot on your vehicle that looks remarkably similar to a bull's-eye.

c. These spray-on paints do not resist chemical agents. Instead, they can actually soak up the agent, making it impossible to decontaminate the vehicle without physically removing the sprayed-on paint. Soldiers can still be exposed to chemical agents even after the vehicle is decontaminated.

**2-4. WD CARC Test.** If you suspect that your vehicle has been spot painted with a commercial can of aerosol enamel or alkyd paint, run this test. Wet a cloth with acetone and rub hard on the suspected surface for 10 seconds. Wet another clean cloth with acetone and rub again for 10 seconds in the same spot. If no paint comes off the second time, it's either CARC or WD CARC. (The second wipe is necessary because the first wipe may remove overspray.) If paint comes off the second time, it's the wrong stuff. You'll have to completely remove the bad paint by sanding or grinding before spot painting with WD CARC.

**2-5. Where Not Used.** CARC is NOT to be used on fabrics, metals that have anodized or parkerized finishes (like weapons), hoses or other flexible surfaces. It should not be used on exhaust pipes, turbochargers, cooling fins or



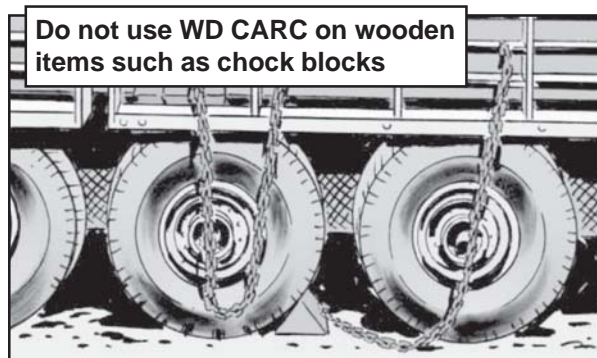
other surfaces that conduct heat or reach temperatures above 400°F.

If you're not sure whether to use CARC on a particular surface, check with your Logistics Assistance Representative at the local USAMC Logistics Assistance Office (LAO). If you don't know where to locate your LAO, check out DA Pam 750-8, *TAMMS*, Table C-2, beginning on Page 242. You can also access LAO offices on the Internet at:

<https://aeps.ria.army.mil/aepspublic.cfm>

Click on AMC LSE OFFICES under Public Applications. That takes you to a locator web page displaying LAO regions on a flattened globe. Click on the region you want and you'll get a map of the region and where LAOs are located. Click on the location you want to get the email address for that office.

**2-6. CARC on Wood.** Neither CARC nor WD CARC lasts well on wood. Wood expands and contracts with weather changes but CARC/WD CARC won't. It's not flexible enough to move with the wood, so it cracks and peels off.





Follow the good words in Para 3-5e of [TM 43-0139, \*Painting Instructions for Army Materiel\*](#), to protect wood.

**2-7. Painting Responsibility.** The word on who uses WD CARC is found in Para 8-9 of [AR 750-1, \*Army Material Maintenance Policy\*](#). Complete repainting may be done at both Field and Sustainment levels as long as an Occupational Safety and Health Administration (OSHA) approved facility is available. Vehicles may be completely repainted when 25 percent or more of the total vehicle area is deemed unserviceable by supervisory maintenance personnel. Painting at Field level using a brush or roller is limited to touchup painting, which includes restoring painted surfaces after repair.

**2-8. Touch-up Painting.** Touch-up painting is done to prevent corrosion, not for purely cosmetic reasons. If the paint is marred, but not deep enough to see bare metal, you do not need to paint.

**2-9. Camouflage Patterns.** The Army uses a three-color camouflage pattern for equipment used in wooded and other green-vegetated areas and in some arctic or partially snow-covered areas. Single colors are used for desert and totally snow-covered areas. When you're touching up a camouflaged surface, try to repaint using the original camouflage pattern. That pattern was designed to best camouflage the equipment.

### SECTION III. BEFORE YOU PAINT

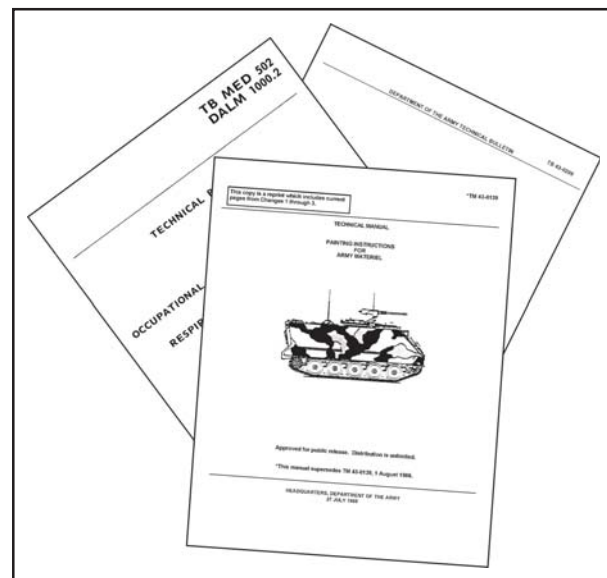
**3-1. Before You Paint.** There's more to using WD CARC (or any other paint) than grabbing a brush, a can of paint and getting to work. Poor preparation results in a poor paint job that may soon have to be redone.

**3-2. Pubs You Need.** There are several publi-

cations that will come in handy as references for painting operations and safety:

a. [TM 43-0139, \*Painting Instructions for Army Materiel\*](#). This manual discusses painting operations, procedures for marking and camouflaging equipment, and methods of applying different types of paint.

b. [TB 43-0209, \*Color, Marking, and Camouflage Painting of Military Vehicles, Construction Equipment and Materials Handling Equipment\*](#). This bulletin covers vehicle safety and technical markings, safety information for dealing with all types of paint, and camouflage patterns.



c. [TB MED 502, \*Occupational and Environmental Health Respiratory Protection Program\*](#). This publication contains information on respirators, including training, face-fitting, leak-testing and maintenance procedures.

d. Other helpful publications can be found listed in Appendix A.

**3-3. Material Safety Data Sheets (MSDS).** An MSDS should be prepared by the manufacturer and accompany each single shipment or

batch of wash primer, WD primer or WD CARC. It is very important that anyone working with these substances read and be familiar with the special precautions or procedures needed, as well as first-aid measures. Along with the product's ingredients and specific protection information, the MSDS will contain:

a. **Reactivity Data.** This tells about the stability, hazardous decomposition, and other properties of the substance.

b. **Spill and Disposal Procedures.** This tells you what steps have to be taken in the event of an accidental spill and how to dispose of left-over product.

c. **Fire and Explosion Hazard Data.** This provides the flash point of the product, special fire fighting procedures, and what type of fire extinguisher may be required.

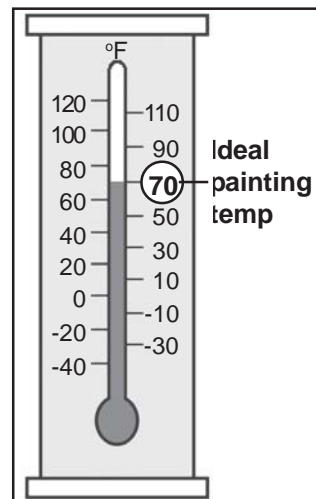
d. **Health Hazards.** This makes you aware of any emergency or first-aid procedures required if the product is inhaled or comes in contact with your skin or eyes.

**3-4. Health Concerns.** Check with your local safety office and medical support facility. They can advise you on the hazards involved in painting operations and proper precautions to take.

**3-5. Weather for Painting.** Weather conditions when you paint are important. Painting when temperatures are too hot or cold greatly affect the cure time. The paint may not dry properly and probably will not last. You'll get the best results when you:

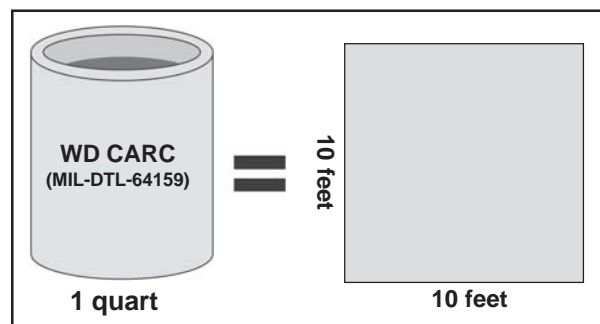
a. Try to paint when the temperature is between 60°F and 90°F. The ideal temperature is 70°F with a humidity of 45-50 percent. You can paint with WD CARC when the temperature and humidity are more or less than the ideal, but cure time will be affected. Cure time increases with

low temperatures and high humidity. At 70°F, it takes about one week for a complete cure, though the vehicle can be handled in a few hours. Good, proper ventilation will also assist in drying when humidity is high (greater than 70%). Higher temperatures and lower humidity will reduce cure times for WD CARC.



b. Paint in the shade, on overcast days, or in the evening hours to avoid direct sunlight.

**3-6. Coverage.** The wash primer, WD primer and WD CARC are two-component compounds. Be sure that you mix the components in the proper proportion. Using the wrong proportion won't make the compound dry quicker or produce a better coating. In fact, you may end up with paint that peels right off. Take a look at Section V for mixing instructions. A quart of WD CARC topcoat or WD primer will cover about 100 square feet.



**3-7. Curing.** Once you mix the two components of the wash primer, WD primer or WD CARC topcoat, they start to harden—cure—and nothing can stop it.

a. Wash primer. MIL-C-8514 will last about four hours before hardening. You have about eight hours to use DOD-P-15328.

b. WD primer. You have about six hours to use MIL-DTL-53030B WD primer and MIL-DTL-53022C solvent-based primer. You'll have four hours to use MIL-PRF-85582C WD primer.

c. WD CARC. Both Type I and Type II WD CARC begins to harden four hours after mixing.

**SECTION IV. SAFETY PRECAUTIONS**

**4-1. Safety Needed.** Just like most things you do during the course of any day in the motor pool, there are certain safety procedures that you have to follow when painting. For most touchup painting, you need to take a few commonsense precautions.

**4-2. Solvents.** The concentration of solvents in WD CARC is much lower than in CARC, but it does still contain solvents. These solvents are potentially flammable, so never paint around open flames or where there are sparks, like from someone welding.

**4-3. Personal Protection.** Although WD CARC is water-based, the personal protective equipment required during spray and brush application remains the same as for CARC. Both contain solvents, so you'll need plenty of ventilation. If possible, paint outside, but out of the direct sun. If you must paint inside a building, paint in a bay with doors open on each end. Your local industrial hygienist can measure the air-flow to see if you have adequate ventilation. Then make sure you have the following protective equipment:

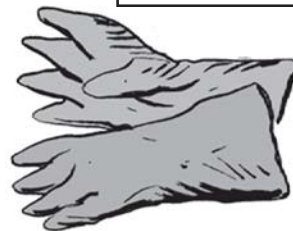
a. Respirator. A respirator—not just a dust mask—is always required when spray paint-



ing with WD CARC. When spot painting with a brush or roller, however, you may or may not need a respirator, depending on the conditions and location. Contact your local occupational safety and health office to perform an air sample evaluation of your work area. If a respirator is required, they'll do a baseline medical evaluation, fit-test you for the proper respirator and train you in its use. Let them know if any sanding or grinding of old paint will be done. A different type of respirator may be required to filter out dust.

b. Gloves. Wear silicone rubber gloves that will keep the paint off of your hands. Sol-

**Rubber gloves protect hands**



vents in the paint can be absorbed through your skin, and make your hands dry and cracked. Some solvents and other CARC components can make you sick,

too. Besides, WD CARC that dries on your skin won't come off easily. You'll have to scrub with soap and water to remove it.

c. Face Protection. Use a face shield or splash goggles to keep paint off your face and out of your eyes, especially when mixing. You'll need the shield or goggles to protect your eyes if you use a power sander or grinder to prepare the surface, too.

**Protect eyes with face shield**





d. Clothing. Wear clothing that covers all of your skin. Coveralls work well. Keep sleeves rolled completely down. When sanding and grinding, wear coveralls that are disposable or that stay at work. This helps to prevent any contaminants in paint dust from being carried home on clothing.

e. Hearing Protection. Normally you will not need hearing protection when you paint.



However, you will need earplugs or noise muffs if you use a power sander or grinder to remove old paint and rust. The folks from your local occupational safety

and health office can tell you the right hearing protection to use.

## Section V. TOUCHUP STEP-BY-STEP

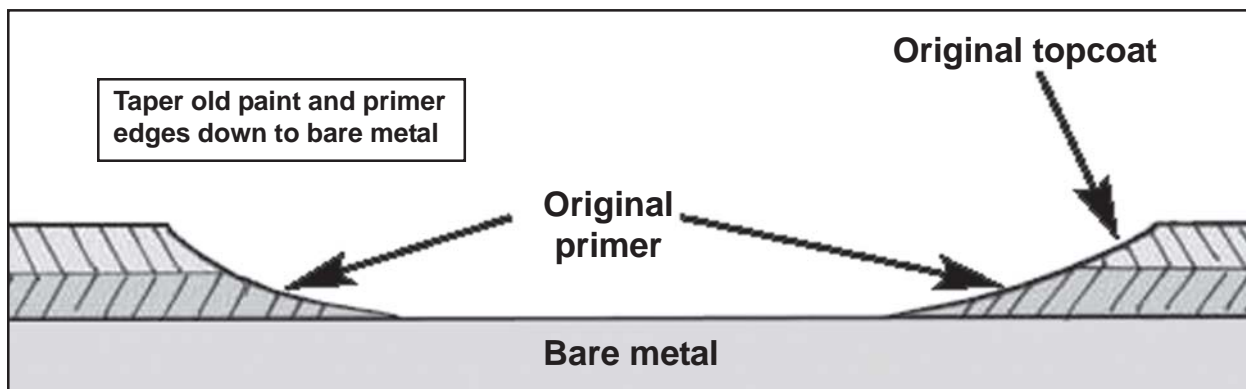
**5-1. Steps to Follow.** There are a number of steps to follow when you spot paint with the WD CARC system. If you skip a step or take a shortcut, you'll end up with a coating that peels easily or one that bubbles up and falls off.

**5-2. Surface Preparation.** Surface preparation is important. If you skip it, or skimp on it, the paint won't stick to the surface. You can apply WD CARC over CARC, but the old topcoat must be clean, sound, and tightly bonded to the

surface. Inspect the surface to be spot painted and follow these steps:

a. Sanding. If the topcoat is merely scratched, lightly scuff sand the blemished area. Damage that exposes bare metal often involves rust. You must remove all traces of rust by sanding or with an orbital grinder. The surface immediately surrounding the exposed metal should then be sanded, using a feathering-in technique. In other words, the thickness of the film should be smoothly tapered starting from the center and going from bare metal, to primer, to topcoat. Clean up any dust or paint particles with a wet/dry HEPA vacuum, wet wipes, or sweep up using a sweeping compound to suppress dust.

b. Cleaning. Wash the surface thoroughly with a solution of liquid detergent, NSN 7930-



00-282-9699, and water. You must remove all loose sanding debris, grease, oil (including fingerprints), and fuel residue to ensure the WD primer and WD CARC will properly stick to the surface. Rinse completely with clean water and let the area dry. Crevices and seams will take longer to dry, so make sure all moisture is gone before continuing. Be very careful to keep the surface free of dirt, dust, fingerprints and other contaminants after cleaning.

**5-3. Pretreatment.** If the old paint is sound and you didn't have to sand to bare metal, you don't need the pretreatment and WD primer, so you can skip to Para 5-5. Otherwise, immediately coat all bare metal surfaces with a coat of wash primer (DOD-P-15328 for steel surfaces or MIL-C-8514 for aluminum surfaces). The wash primer protects the surface and will help the WD primer bond to it. A sponge gives better control for this application.



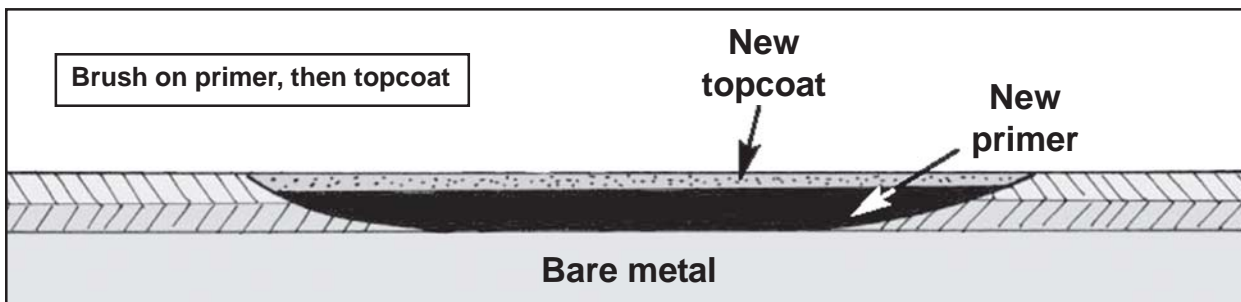
**5-4. WD Primer.** After the pretreatment coating is dry—at least 30 minutes, but no more than

24 hours—apply a coat of WD primer.

a. **Mixing.** Mixing instructions for WD primer will depend on the type used.

(1) MIL-DTL-53030A. This epoxy primer is intended for steel or aluminum surfaces and consists of two components. Component A is a pigmented polyamide while component B is a clear epoxy. Stir component A until it is uniform in texture. Then mix one part of component B with three parts of component A. Stir until the mixture is smooth. Thin the WD primer with deionized water. NSN 6810-01-075-0618 brings a 4-oz bottle and NSN 6550-01-370-7494 gets a 5-gal bottle. You can also use distilled water. Follow the manufacturer's instructions on how much water can be safely added. Once mixed, allow the WD primer to stand for 30 minutes before use. The WD primer will harden in about six hours, so only mix up what you need.

(2) MIL-DTL-53022C. This epoxy primer is intended for steel or aluminum surfaces and consists of two components. Component A is a pigmented polyamide while component B is a clear epoxy. Stir component A until it is uniform in texture. Then mix one part of component B with four parts of component A. Stir until the mixture is smooth. Follow the manufacturer's instructions on how much solvent can be safely added, if needed. Once mixed, allow the primer to stand for 30 minutes before use. The primer will be ready to paint within 30 minutes or when the solvents have flashed off.



Two hours is an ideal time to properly allow the solvents to flash off and the primer to cure. Only mix up what you need since it has a pot life of six to eight hours.

(3) MIL-PRF-85582C. This epoxy primer is intended for aluminum and steel surfaces. Use type II, Class C2, for aviation equipment and you can use either Class C2 or N for tactical ground or support equipment. It consists of two components. Component A is a pigmented epoxy resin solution while component B is the curing agent. Mix the two components in the proportion specified by the manufacturer. Thin the WD primer with deionized or distilled water. Follow the manufacturers instructions on how much water can be safely added. Once mixed, allow the WD primer to stand for 30 minutes before use. The WD primer will harden in about four hours, so only mix up what you need.

b. Application. Use a paint brush to apply the WD primer. The coating should be 1.0 to 1.5 mils for MIL-P-53030A and 0.8 to 1.2 mils for MIL-PRF-85582C. After application, the WD primer will dry hard in about five to six hours. High humidity and low temperatures will slow the drying process.



**5-5. WD CARC.** Once the WD primer is dry, it's time to apply the WD CARC topcoat. WD CARC is available in bulk kits or self-contained touch-up kits. Select the WD CARC application that best fits your situation. All of the fol-



lowing information applies to both Type I and Type II WD CARC. The kits are approved and recognized as Type III for MIL-DTL-64159. Efforts are ongoing to include touch up kits for MIL-DTL-53039 solvent-based CARC. However, touch up kits are currently available only for the WD-CARC version.

a. Bulk kits. These kits are available in sizes of 3 pints, 3 quarts, 3 gallons and 15 gallons. See [Pages B-2 through B-4](#) for ordering information.

(1) Mixing. WD CARC comes in two-component kits that have to be mixed before use. Component A is a hydroxyl functional polyurethane that includes pigments, additives and solvents. Component B is an aliphatic isocyanate prepolymer. The mixing ratio is two parts of component A to one part of component B. Once the two components are thoroughly mixed, you can thin the paint by adding deionized water.



Follow the manufacturers recommendation on how much water can be safely added. Be careful not to overthin with water since that will make the paint unusable. Again,

you must thoroughly mix the paint to ensure the water and both components are completely blended.

(2) Application. Use a paint brush or roller to apply the WD CARC to a thickness of 1.8 to 2.5 mils. Cure time will increase with low temperatures and high humidity, and decrease with higher temperatures and low humidity. At an optimum temperature of 70°F, Type I WD CARC will dry to touch in approximately 50 minutes, dry hard in four hours, dry through in five hours, and completely cure within seven days. Type II WD CARC will dry to touch in approximately 60 minutes, dry hard in six hours, dry through in eight hours, and completely cure within seven days.

b. Touch-up Kits. Army Research Labs has tested and validated self-contained touch-up kits for use where touch-up or stenciling are needed. These kits are available as an aerosol or as a non-aerosol with a sponge roller or brush applicator. An identical color match with touch up kits is not required. Colors that are lighter or



darker are acceptable so long as qualified products are being used. See [Pages B-5 through B-7](#) for ordering information. Follow the manufacturer's instructions for use.

**5-6. Unused Paint.** Treat any leftover wash primer, WD primer or WD CARC as hazardous



waste. If it has hardened, seal it and dispose of it properly. Your unit's SOP should address how to handle hazardous waste. You can also find

disposal information in the Material Safety Data Sheets or at your local Environmental Office.

## SECTION VI. PAINT FAILURES

**6-1. Reasons for Failure.** There are a number of reasons why CARC, WD CARC, or any other paint fails soon after application. Some reasons are:

a. The surface was improperly prepared. There was loose or blistered paint, sanding dust, grease or oil, diesel fuel, or fingerprints on the surface. Or it could be that lacquer used previously was not removed.

b. No pretreatment or primer was used. The topcoat was applied directly to bare metal.

c. The primer did not have time to dry properly before the topcoat was applied.

d. The surface was too hot or cold. The paint didn't have a chance to cure properly.

**6-2. What to Do.** With most paint failures, the only sure cure is to strip it down to bare metal and start over. It takes a lot longer to do it over, so your best bet is to do it right the first time.



## SECTION VII. WELDING WD CARC-PAINTED SURFACES

**7-1. Welding is Out.** Never weld or use a cutting torch on CARC- or WD CARC-painted material. Welding or cutting painted surfaces releases toxic gases, vapors and metal fumes.

**7-2. Remove Paint.** Before applying any heat, sand or grind off the paint down to bare metal on an area at least four inches on either side of where you plan to apply heat. If the other side of the metal is painted, remove the paint there, too.

## SECTION VIII. WD CARC REMOVAL

**8-1. Stripper.** There are times you need to remove CARC from a surface that can't be scratched or scored, such as cannon mounts or aircraft surfaces. You can't use sandblasting or sanding. Instead, use epoxy and polyurethane paint remover. See [Page B-1](#) for ordering information.

**8-2. Safety.** Read the warning label on the stripper and take all the precautions called for. The Material Safety Data Sheet will have additional information. Your Preventive Medicine folks can help, too.

**8-3. Waste Disposal.** Be sure to check with your local environmental office for guidance on disposing of the used stripper.

## SECTION IX, RESPIRATOR CARE

**9-1. Respirator Authorized.** Under some conditions you may need to wear a respirator. If you are issued a respirator, follow the instructions of the manufacturer and the issuing office (safety or medical support facility). Remember, your gas mask is not a substitute for a commer-

cial, NIOSH-approved respirator.

**9-2. Training, Fitting and Testing.** Your local safety office or medical support facility will fit you for a respirator and be sure you have the correct type. They will also teach you how to use it and to check for leaks before each use.

**9-3. Before Use.** Never alter or modify your respirator. Be sure you follow the manufacturer's instructions for use and wear. Look for tears or other damage that would prevent a positive seal. When you first put the respirator on, do the positive pressure and negative pressure tests called for in [Para 2-7b\(4\) of TB MED 502](#). If you can't get a good seal, don't paint.

**9-4. Respirator Use.** Use your air purifying respirator (APR) only in well-ventilated areas where plenty of oxygen is available. Otherwise, you may pass out. Leave the area immediately if breathing becomes difficult, if you get dizzy or if you taste or smell paint.

**9-5. Cartridge Changes.** Replace the filter and the cartridge in your respirator according to the change-out schedule determined by health and safety personnel at your facility or at the first sign of paint odor while you're wearing it. Leave the painting area before removing the respirator. Then, unscrew the cartridge to replace it. Be sure the rubber gasket is evenly seated in the filter holder when you put in the new cartridge.

**9-6. Paint Pre-filter Replacement.** Replace the pre-filter when breathing becomes difficult. Remove the filter retaining ring from the front of the cartridge. Put the replacement filter in the retainer and replace the entire assembly on the cartridge front.

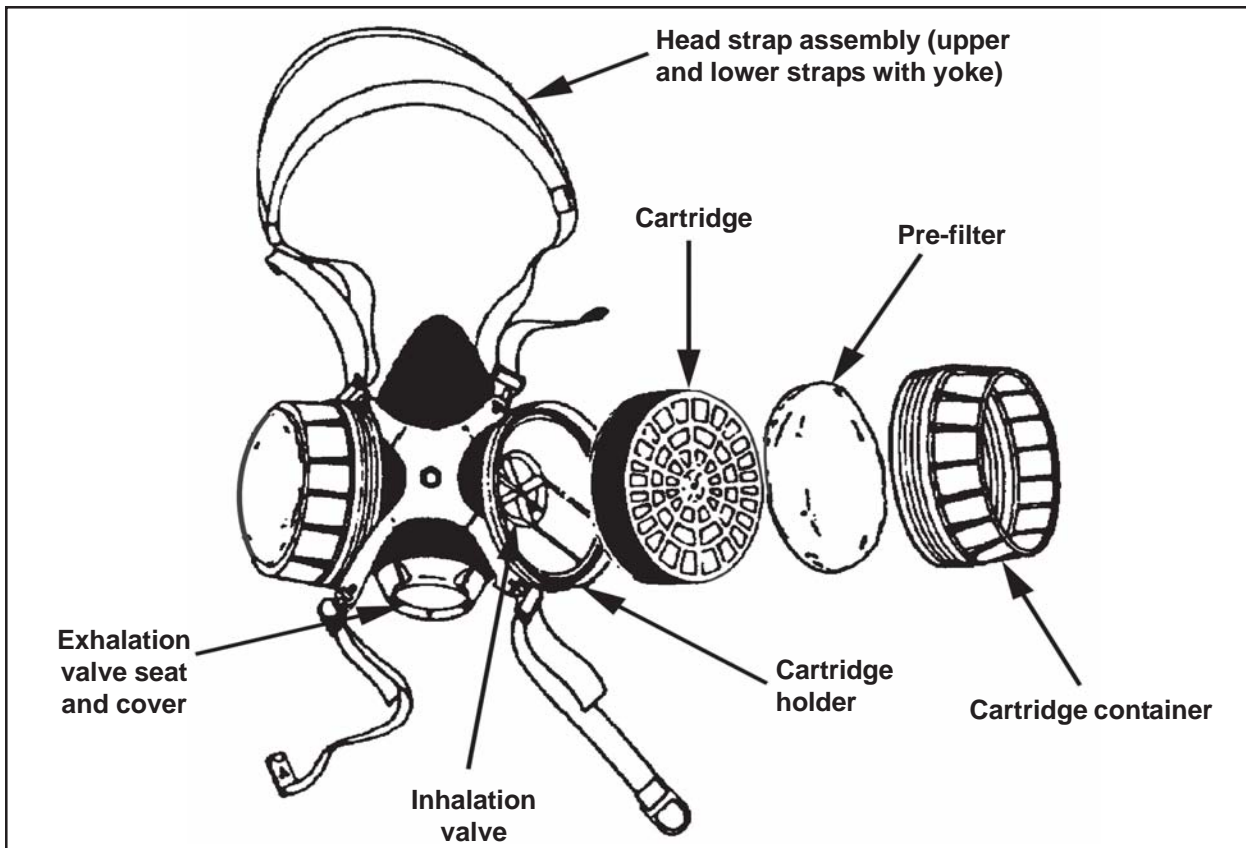
**9-7. Filter Replacement for Sanding and Grinding Operations.** Replace the filter cartridges for sanding and grinding operations ac-



ording to the schedule established by your safety and health office or when breathing through the filters becomes difficult.

**9-8. Cleaning.** Clean and sanitize your respirator after each day's use by following the respirator manufacturer's instructions or consult safety and health personnel for proper cleaning procedures. Before using the respirator, be sure to check it for leaks.

**9-9. Storage.** Before storing your respirator, make sure it's clean and dry. Store the respirator in a clean plastic bag labeled with your name and the date it was cleaned. Make sure that you store the respirator in a cool, dry area free of airborne contamination. Do not put it in your locker unless it is in a container or carton. Be sure to check the respirator again before using it.



## APPENDIX A PUBLICATION LIBRARY

Here's a list of publications and specifications needed for painting operations at various maintenance levels.

<b>Publication</b>	<b>Title</b>
TM 43-0139	<i>Painting Instructions for Army Materiel</i>
TM 55-1500-345-23	<i>Painting and Marking of Army Aircraft</i>
TB MED 502	<i>Occupational and Environmental Health Respiratory Protection Program</i>
TB 43-0118	<i>Field Instructions for Painting and Preserving Electronics Command Equipment</i>
TB 43-0144	<i>Painting of Watercraft</i>
TB 43-0147	<i>Color, Marking and Camouflage Patterns used on Military Equipment</i>
TB 43-0209	<i>Color and Marking of Military Vehicles, Construction Equipment and Materials Handling Equipment</i>
TB 746-95-1	<i>Color, Marking and Camouflage Pattern Painting for Armament Command Equipment</i>
TB 750-10	<i>Painting, Replating and Preserving Instructions for Communications Security Equipment</i>
MIL-C-53072	<i>Chemical Agent Resistant Coating (CARC) System Application Procedures and Quality Control Inspection</i>
MIL-T-704	<i>Treatment and Painting of Materiel</i>
MIL-STD-171	<i>Finishing of Wood and Metal Surfaces</i>
MIL-STD-186	<i>Protective Finishing for Army Missile Weapon Systems</i>
MIL-STD-193	<i>Paint Procedures and Marking for Vehicles, Construction Equipment and Material Handling Equipment</i>
MIL-STD-194	<i>System for Painting and Finishing Fire-Control Material</i>

**TB 43-0242**

MIL-STD-642	<i>Identification Marking of Combat and Tactical Transport Vehicles</i>
MIL-STD-1473	<i>Standard General Requirements for Color and Marking of Army Materiel</i>
MIL-DTL-53039	<i>Coating, Aliphatic Polyurethane, Single Component, Chemical Agent Resistant</i>
MIL-DTL-64159	<i>Coating, Water Dispersible Aliphatic Polyurethane, Chemical Agent Resistant</i>
MIL-DTL-53022C	<i>Primer, Epoxy Coating, Corrosion Inhibiting Lead And Chromate Free</i>

Use the ASSIST-Quick Search database to gain direct access to Defense and Federal specifications and standards available. Go to:

<http://assist.daps.dla.mil/quicksearch/>

Just enter the specification you need in the Document ID block and click Submit.

**APPENDIX B  
WD CARC SYSTEM NSNs**

Here are the NSNs for commonly-used quantities of wash primer, WD primers, strippers, and WD CARC topcoats used with the WD CARC system:

<b>Wash Primer, DOD-P-15328 (for aluminum surfaces)</b>	
NSN 8030-00-	Kit Size
850-7076	1-qt
281-2726	1-gal
165-8577	5-gal

<b>Wash Primer, MIL-C-8514 (for steel surfaces)</b>	
NSN 8030-	Kit Size
01-015-6104	1-gal
00-082-2425	5-gal

<b>WD Primer</b>			
Specification	Color	Size	NSN 8010-01-
MIL-P-53030A	White	1 1/4-qt	193-0519
MIL-P-53030A	White	1 1/4-gal	193-0520
MIL-P-53030A	White	5-gal	193-0521
MIL-PRF-85582C	Light green	1-qt	218-0856
MIL-PRF-85582C	Light green	1-gal	218-7354
MIL-DTL-53022, Type 1	White	1 1/4-qt	193-0516
MIL-DTL-53022, Type 1	White	1 1/4-gal	193-0517
MIL-DTL-53022, Type 2	White	1 1/4-qt	309-0328
MIL-DTL-53022, Type 2	White	1 1/4-gal	309-0329
MIL-DTL-53022, Type 2	White	4-gal	368-6249
MIL-DTL-53022, Type 2	White	5-gal	309-0327

<b>Stripper</b>	
NSN 8010-00-	Quantity
142-9273	1 Pt
181-7568	1 Gal
926-1488	5 Gal
926-1489	55 Gal

## WD CARC Topcoat, Type I

Color	Fed Std No.	Kit Size	NSN 8010-01-
Green	34094	3-pt	492-6637
		3-qt	492-6638
		3-gal	492-6639
		15-gal	492-6640
Brown	30051	3-pt	492-6641
		3-qt	492-6642
		3-gal	492-6643
		15-gal	492-6644
Tan	33446	3-pt	492-6645
		3-qt	492-6646
		3-gal	492-6648
		15-gal	492-6649
Black	37030	3-pt	492-6650
		3-qt	492-6651
		3-gal	492-6652
		15-gal	492-6654
Black	37038	3-pt	545-1815
		3-qt	545-1817
		3-gal	545-1818
		15-gal	545-1820
Aircraft green	34031	3-pt	492-6655
		3-qt	492-6656
		3-gal	492-6657
		15-gal	492-6658
Aircraft gray	36300	3-pt	492-6659
		3-qt	492-6660
		3-gal	492-6661
		15-gal	492-6663



## WD CARC Topcoat, Type II

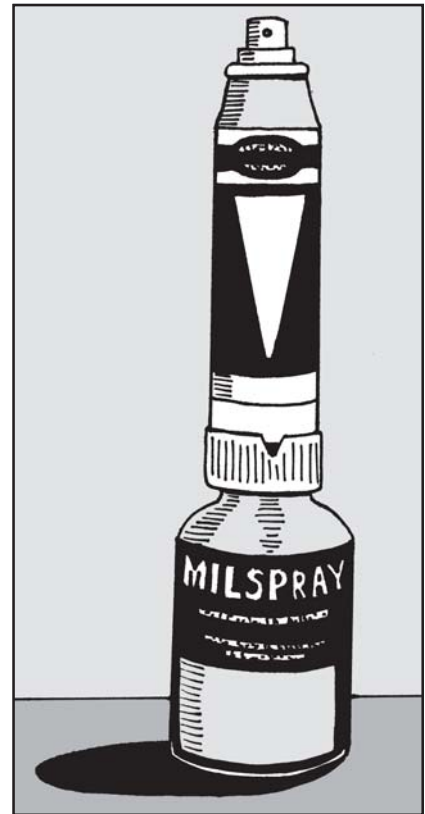
Color	Fed Std No.	Kit Size	NSN 8010-01-
Green	34094	3-pt	493-3168
		3-qt	493-3169
		3-gal	493-3170
		15-gal	493-3171
Brown	30051	3-pt	493-3172
		3-qt	493-3173
		3-gal	493-3174
		15-gal	493-3175
Tan	33446	3-pt	493-3176
		3-qt	493-3177
		3-gal	493-3179
		15-gal	493-3180
Black	37030	3-pt	493-3182
		3-qt	493-3183
		3-gal	493-3190
		15-gal	493-3191
Black	37038	3-pt	545-1944
		3-qt	545-1947
		3-gal	545-1949
		15-gal	545-1955
Aircraft green	34031	3-pt	493-3192
		3-qt	493-3193
		3-gal	493-3194
		15-gal	493-3195
Aircraft gray	36300	3-pt	493-3196
		3-qt	493-3197
		3-gal	493-3198
		15-gal	493-3199

## WD CARC Topcoat, Type II

Color	Fed Std No.	Kit Size	NSN 8010-01-
Red	31136	3-pt	545-1823
		3-qt	545-1825
		3-gal	545-1826
		15-gal	545-1835
Yellow	33538	3-pt	545-1836
		3-qt	545-1838
		3-gal	545-1840
		15-gal	545-1841
Olive drab	34088	3-pt	545-1842
		3-qt	545-1843
		3-gal	545-1844
		15-gal	545-1845
Blue	35044	3-pt	545-1938
		3-qt	545-1939
		3-gal	545-1941
		15-gal	545-1942
White	37875	3-pt	545-1956
		3-qt	545-1957
		3-gal	545-1958
		15-gal	545-1959
Sand	33303	3-pt	545-1960
		3-qt	545-1961
		3-gal	545-2016
		15-gal	545-2035

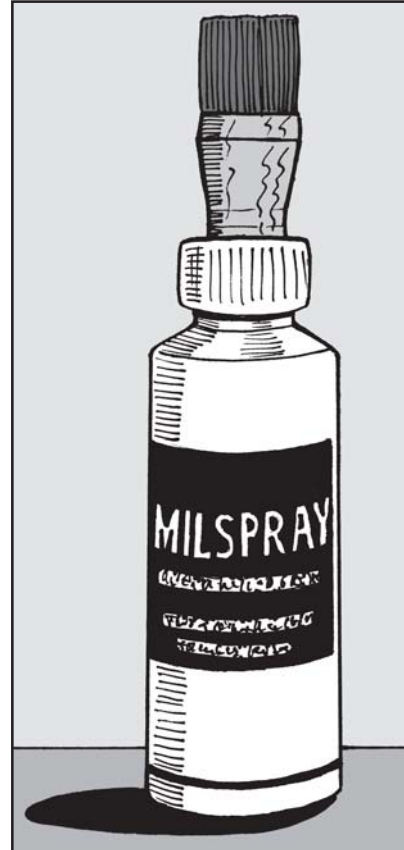
## WD CARC Topcoat, Aerosol Spray, Type II

Color	Fed Std #	Quantity	NSN 8010-01-
Green	34094	Box of 12	546-7712
Tan	33446	Box of 12	546-7711
Black	37030	Box of 12	546-7713
Brown	30051	Box of 12	546-7709
Sand	33303	Box of 12	547-1917
Yellow	33538	Box of 12	547-1919
Olive drab	34088	Box of 12	547-1920
Gray	36231	Box of 12	547-1921
Gray	36300	Box of 12	547-1922
White	37875	Box of 12	547-1923
Aircraft green	34031	Box of 12	553-5824
Green	34094	Box of 12	546-8093
Brown	30051	(4 of each	
Black	37030	color)	



## WD CARC Topcoat, Brush-top Applicator, Type II

Color	Fed Std #	Quantity	NSN 8010-01-
Green	34094	Box of 12	546-7585
Tan	33446	Box of 12	546-7587
Black	37030	Box of 12	546-7588
Brown	30051	Box of 12	546-7589
Aircraft red	31136	Box of 12	546-7591
Aircraft insignia blue	35044	Box of 12	546-7592
Sand	33303	Box of 12	547-1876
Yellow	33538	Box of 12	547-1878
Olive drab	34088	Box of 12	547-1880
Gray	36231	Box of 12	547-1882
Gray	36300	Box of 12	547-1884
White	37875	Box of 12	547-1888
Green	34094	Box of 12	546-7590
Brown	30051	(4 of each	
Black	37030	color)	



## WD CARC Topcoat, Roller-top Applicator, Type II

Color	Fed Std #	Quantity	NSN 8010-01-
Green	34094	Box of 12	546-7593
Tan	33446	Box of 12	546-7594
Black	37030	Box of 12	546-7596
Brown	30051	Box of 12	546-7595
Aircraft red	31136	Box of 12	546-7598
Aircraft insignia blue	35044	Box of 12	546-7599
Aircraft white	37875	Box of 12	546-7699
Aircraft yellow	33538	Box of 12	546-7700
Sand	33303	Box of 12	547-1906
Olive drab	34088	Box of 12	547-1908
Gray	36231	Box of 12	547-1910
Gray	36300	Box of 12	547-1913
Aircraft green	34031	Box of 12	553-5822
Green	34094	Box of 12	546-7597
Brown	30051	(4 of each	
Black	37030	color)	





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# Notes

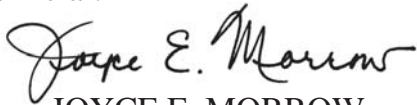
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By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.  
*General, United States Army*  
*Chief of Staff*

Official:

A handwritten signature in cursive script that reads "Joyce E. Morrow".

JOYCE E. MORROW  
*Administrative Assistant to the*  
*Secretary of the Army*

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