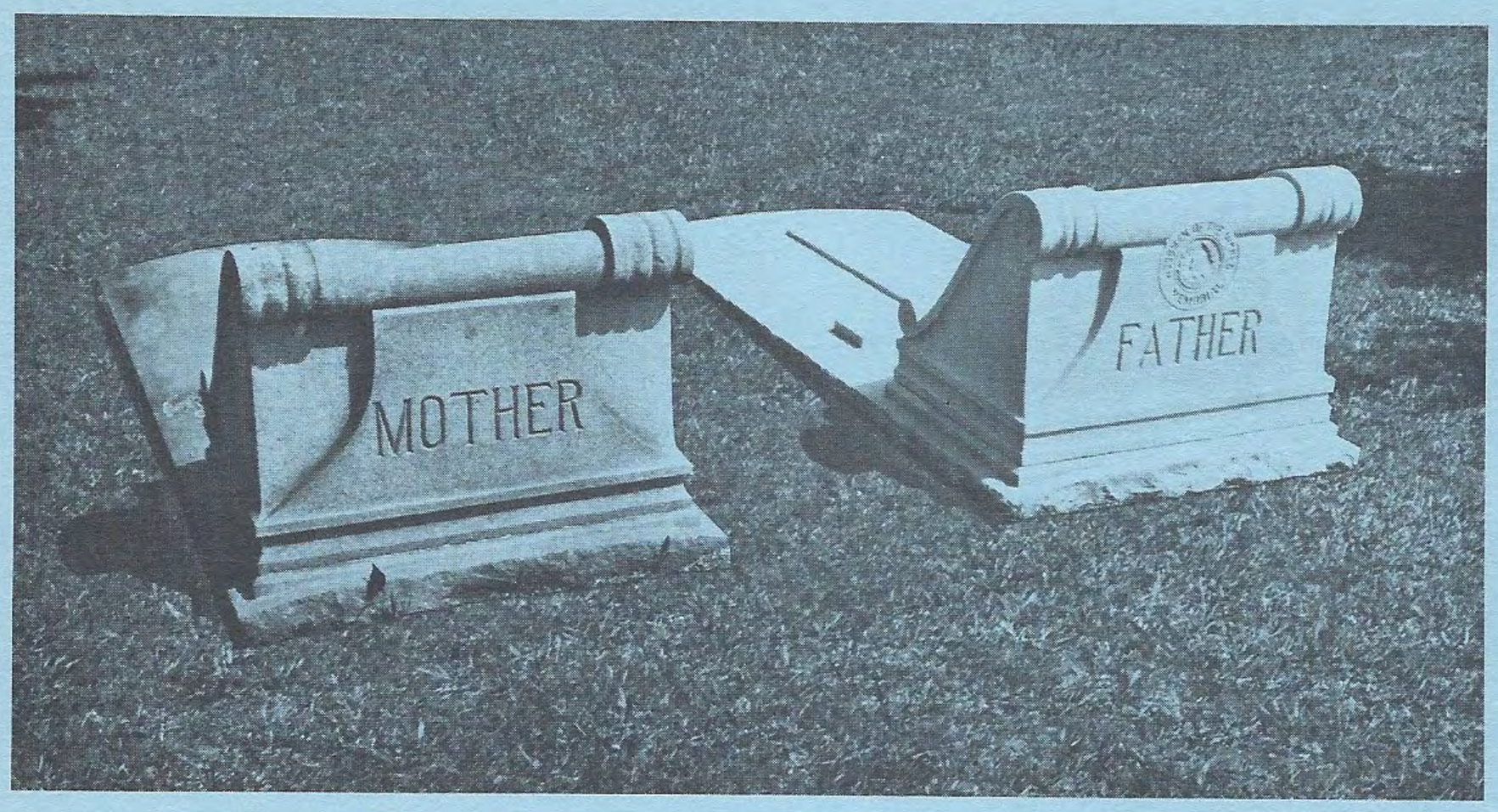
CLEANING GRANITE MONUMENTS



ELBERTON GRANITE ASSOCIATION, INC.
P.O. BOX 640 • ELBERTON, GA.

In the Shop —

Clean Before, After Sandblasting

Cleaning has long been recognized by memorialists as a vital part of the sandblast process. Blank monuments which have been displayed outside need cleaning before the sandblast filler is applied because of air pollution or other stains. The addition of filler materials compounds the cleaning problem if the monument has been outside in a display or storage yard — for if filler is applied before washing, any subsequent cleaning action is likely to remove only the filler and not the deeper-seated stains from outside display.

The blank monuments can be washed with plain water, then with soapy water, and rinsed with clear water. Forced pressure is preferable during the final rinsing because it will penetrate rock pitched tops and ends and other crevices.

Removing the Sandblast Filler

To remove sandblast filler, we recommend the use of a good solvent, such as Gulf-Stoddard Solvent or its equivalent. Naphtha and white gasoline are sometimes employed, but the solvent is less expensive and is safer to use because it has a lower flash point. It also does a better job of loosening the filler from the pores of the granite because it does not dry as rapidly as the white gasoline. Apply the solvent to the stone with a good fibre scrubbing brush. Scrub the monument vigorously with the solvent until all of the filler has been completely removed. Do not allow the solvent to dry. Wash the stone immediately with a soapy household detergent; then rinse with warm, clean water.

Engineers from the Georgia Institute of Technology, who made a series of checks into wash rack procedures in the Elberton Granite District, were quite insistent upon the complete removal of all sandblast filler, and all other organic matter, including the residue from the solvent used to remove the filler. Unless all of this organic matter is completely removed from the granite, the result will be "wet and dry" areas and, eventually, the darkening of the uncleaned surfaces which trap airborne pollutants. We cannot too strongly stress the importance of:

1. Washing blank monuments thoroughly before filler is applied.
2. Removing all the sandblast filler with solvent.
3. Removing the solvent residue by scrubbing the surface thoroughly with a good household detergent.
4. Washing down thoroughly with warm water.

CLEANING IS ESSENTIAL

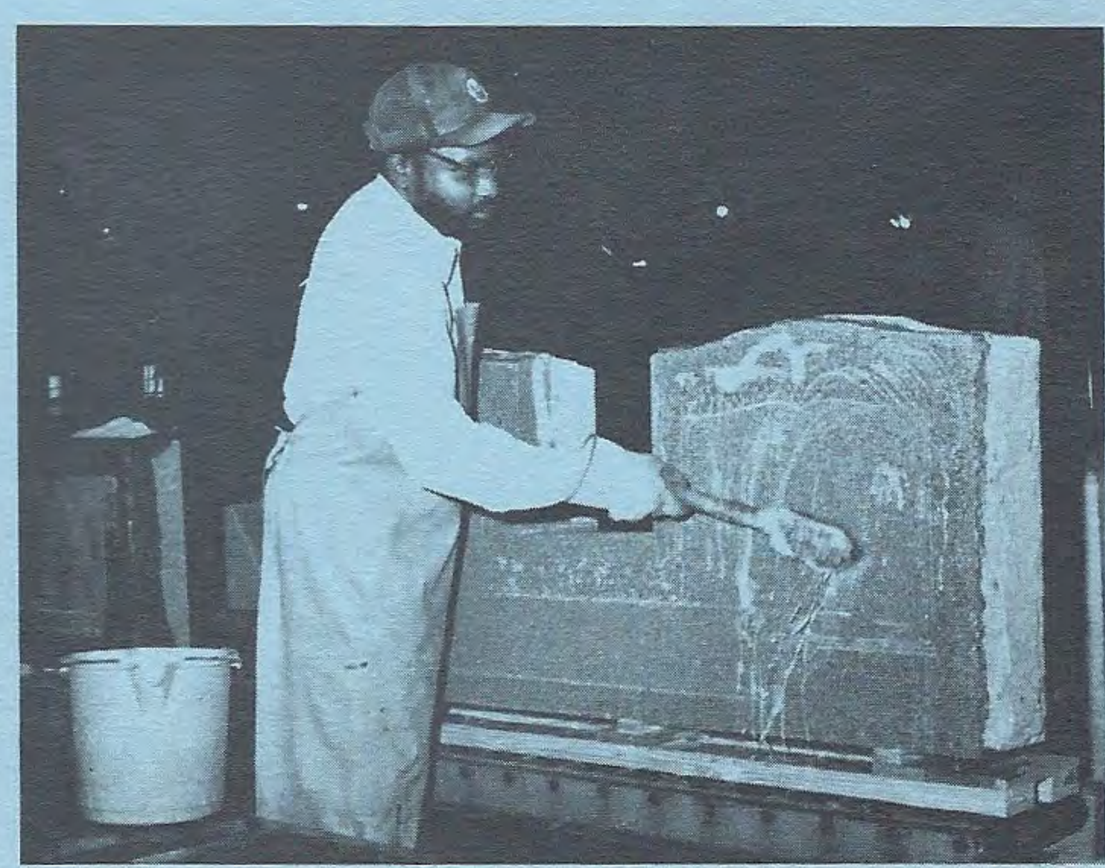
There are probably as many different methods for cleaning monuments as there are manufacturers, retailers or cemeterians. However, regardless of the variety of cleaning methods, all memorialists are likely to agree that monument cleaning in both the shop and the cemetery is an essential part of the retailer's service to the customer and the community.

Monument cleaning is usually required in the following situations:

1. **When carved and lettered monuments received from the manufacturer occasionally have wood, rust, or other stains from crating or shipment.**
2. **Following the completion of sandblast operations in the retail shop.**
3. **Immediately following the setting of the monument in the cemetery.**
4. **After the monument has been outside for a period of time in either the retailer's display or in the cemetery.**

The cardinal rule for all monument cleaning methods is PATIENCE, for patience is a "must" to adequately clean stone. Remember, it takes weeks for a stain to become deep-seated, and it may take weeks for it to come out.

Use a good fibre brush and solvent to remove all sandblast filler and other organic matter from the surface.



Remove solvent residue by scrubbing with a good soapy household detergent.

Basic Monument Cleaning Procedures For Shop Or Cemetery

1. Try to clean monuments on a cool and/or cloudy day and avoid cleaning when the surface is hot to prevent quick drying. On cool and/or cloudy days, the cleaning mixture will be more effective on either wet or dry stone, but better penetration is assured on wet stone. Water-acid mixtures are recommended since regular washing only cleans the surface. There are various types of acid which may be used, including some which won't affect grass. Always use a weak acid first, then a stronger solution if needed.

2. Don't start a cleaning job unless you have an assured amount of water for scrubbing and rinsing. A minimum of 15 gallons of water will be needed to wash and rinse a 3-0 die.

3. Always start any cleaning operation at the bottom and work up, not from the top down. If the monument is small, clean the entire base first, then the die.

4. Wet the entire monument completely with cold, clear water.

5. Using a fibre brush, scrub the monument with a good cleaning preparation. This may be one of the commercial preparations, such as Vapor-X Crystals; or you can prepare the following cleaning solution with chemicals obtained from your local druggist:

   15 ounces of Ammonium Bifluoride
   1 ounce of Oxalic Acid
   1 gallon of cold water

   Follow the proportions precisely; if a commercial preparation is used, follow the manufacturer's recommendations for proper solutions.

   (a) Mix the solution with rain water or well water, rather than city water if possible; additives and chemicals in city water supplies may affect the chemicals being used.

   (b) Add the chemicals to the water, rather than pouring water onto the chemicals. Be sure to dissolve and mix thoroughly.

   (c) The cleaning solution should be mixed in wood or heavy plastic bucket; do not put the solution in a metal bucket.

6. *Do not allow the solution to dry on the stone.* If the surface is extensive, clean only a small area at a time; keep surrounding areas wet with water to avoid streaking. On a large monument, clean the base first; then the two sides and finally the top and ends. Be sure the entire surface of the monument is the same color when you rinse.

7. Don't forget that axed, steeled and rock pitched surfaces require about twice the exposure to the cleaning solution as polished surfaces. When cleaning polished surfaces, wet the entire stone, then apply the cleaning solution to a small area at a time.

8. Rinse immediately. Keep the polish wet while cleaning tops and ends, and continue to rinse the polished surfaces to remove any cleaning solution that may run down from top or members; this will avoid streaking the polished surfaces. Use a water hose if available and apply the water liberally. Insure proper rinsing by scrubbing the surface with a clean fibre brush, washing out the rinse brush often in clean cold water.

9. Mix bicarbonate of soda with water and rinse, to neutralize any acid residue. The inexpensive, kitchen-type of bicarbonate of soda is fine. Mix with clear water until the mixture is a milky color.

10. Then, rinse the soda-water solution from the stone with plenty of cold water, or leave for rain water to work off if in the cemetery.

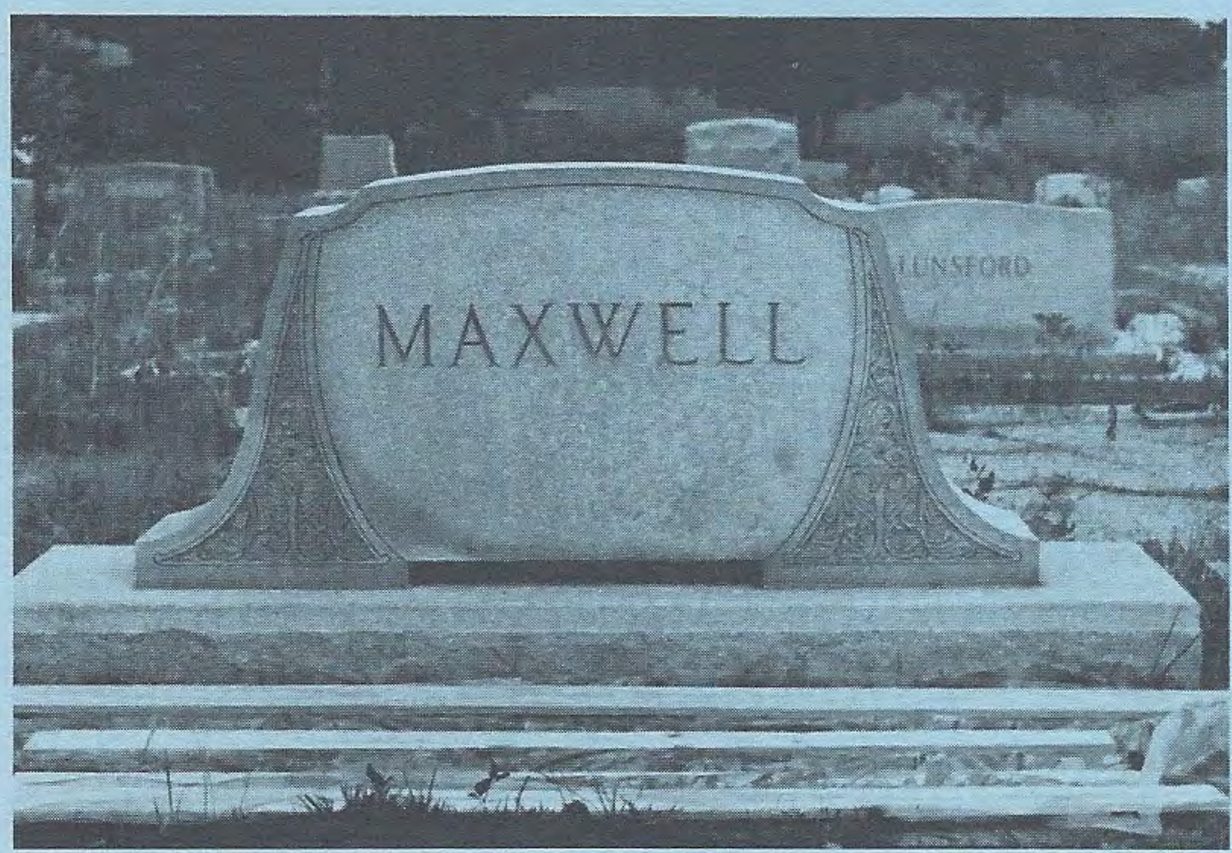
11. Let the cleaned surface dry completely. If the first washing does not produce desired results, go through the above process from the beginning, step by step.

Rinse with warm, clear water. A pressurized hose is best to assure a more thorough rinsing before the detergent can dry.

CLEANING MONUMEN

Cleaning monuments in the cemetery follows basically the same procedures already outlined, but a few additional precautions should be observed:

Choose a cloudy day; don't apply cleaning solutions to hot surfaces, as on a hot summer day, to prevent quick drying. Wear a heavy-duty rain suit, rubber gloves and rubber boots. Most cleaning solutions will not only harm and discolor clothing, but may injure your skin. Have an ample supply of clean, cool water for washing and rinsing. Use plastic or wooden buckets to avoid possible rust. Check the joint between the die and base for small seal breaks, and, if necessary, re-joint before beginning the cleaning process. Otherwise, the cleaning solution will lodge in the break and result in streaks or discoloration. For easy, economical cleaning, use a portable gas-operated, power-pressure pump with three-horsepower motor, and a 55-gallon drum or tank with hoses and a spray attachment. These units will supply up to 700 to 800 pounds of pressure for spray rinsing and assure adequate water penetration. The pump should be thoroughly cleaned after each use, especially the diaphragm. Other equipment items should include high-pressure inlet and outlet hoses, spray gun or wand-type attachment, at least two plastic or wooden buckets, 2 fibre brushes, rubber gloves, rainsuit, boots, and a helmet or face shield.

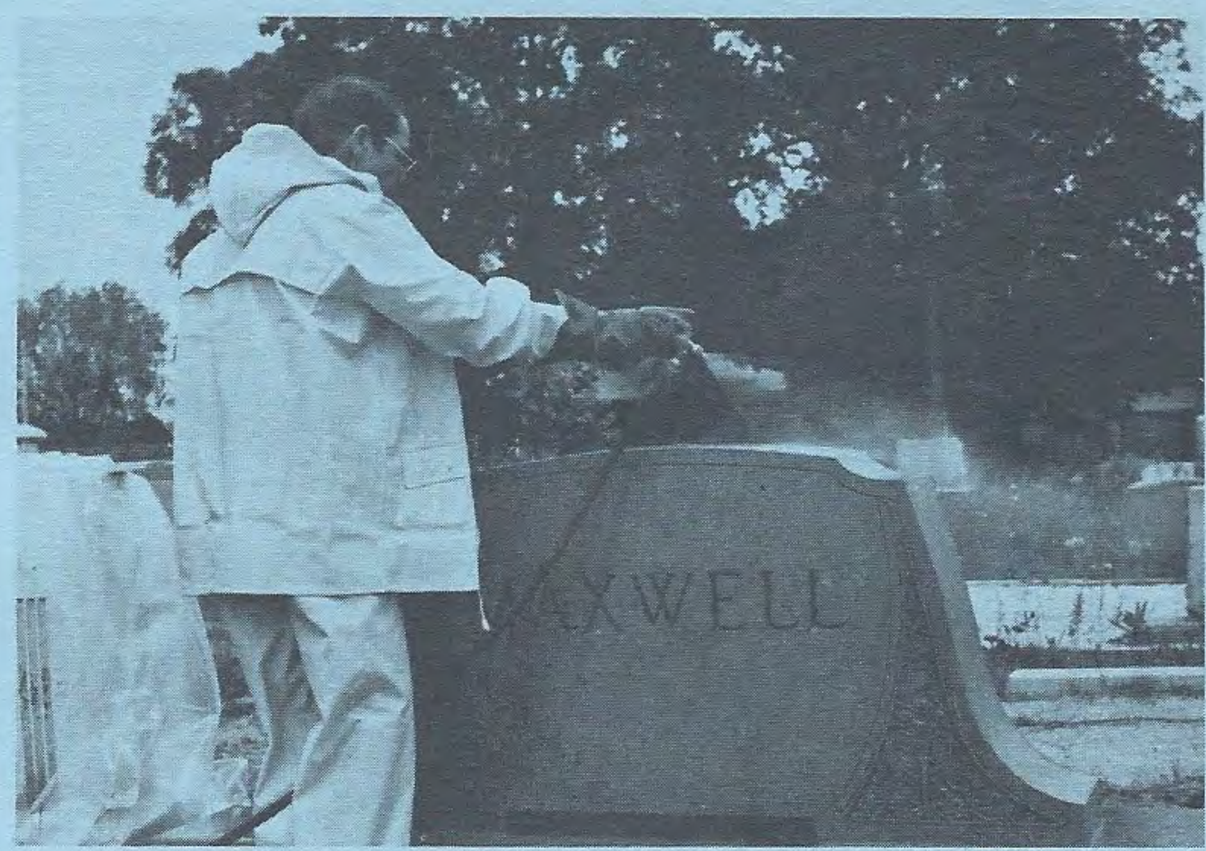


Take precautions to protect grass and shrubs, whether in the cemetery or on grass lawn displays. Use plastic sheeting or other water-repellent material, or heavy paper bags (such as cement bags). Wet sod around the monument thoroughly with cold water. Place plastic or bags around the base within one inch of the base. Lay wide boards over the protective covering to form a platform for the cleaning operation and prevent the covering from blowing. Also cover shrubs and the ends of extremely close monuments to prevent splashing. Always remember, after cleaning is completed, to rinse rubber boots in clear water to avoid tracking the solution onto the surrounding sod.

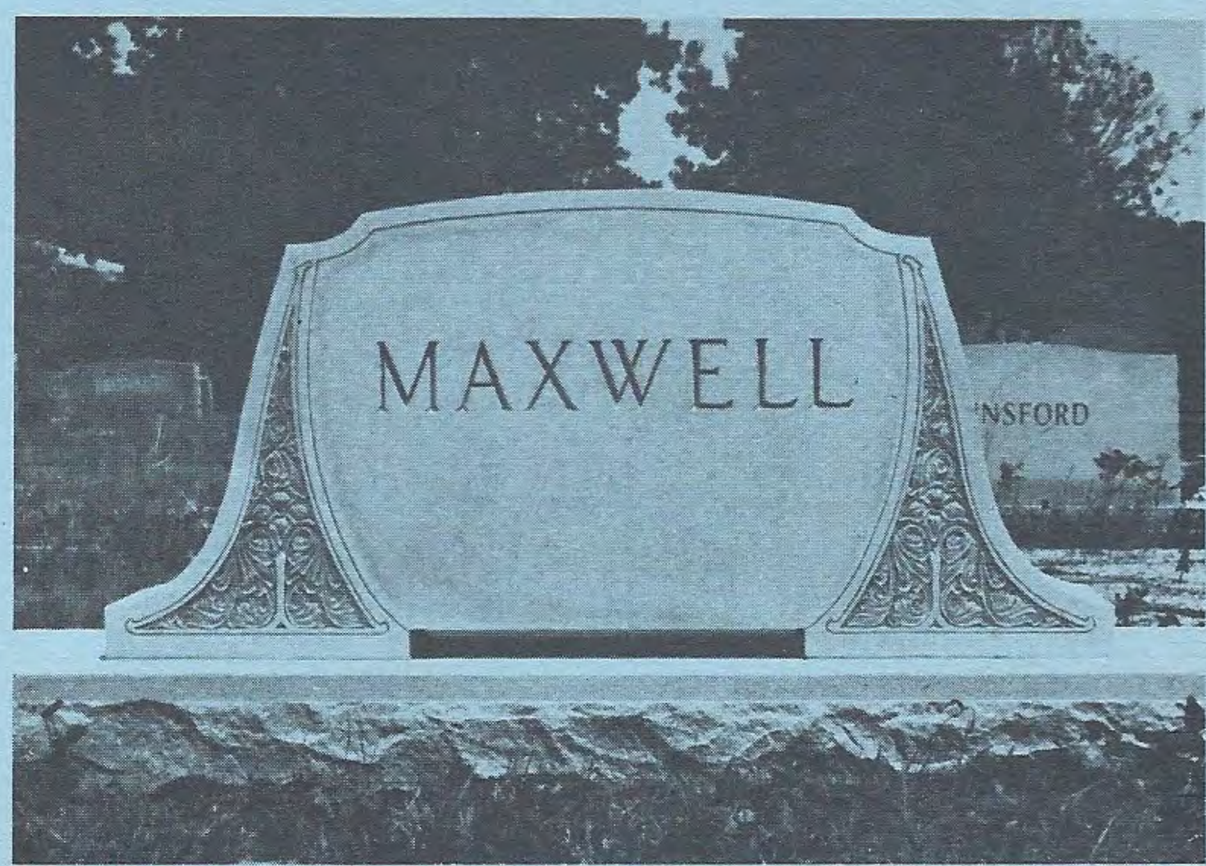
ITS IN THE CEMETERY

Wet the entire monument completely. Then, using a good cleaning solution, complete all sides of a section before going to another section. If the monument is small, clean the base completely before beginning on the die. After each side is completed, do not let the side dry, but keep it wet with water so that drippings from the other sides or upper portions do not streak the already-cleaned portions. Never, never let any portion of the stone dry out.

After application of the cleaning solution, rinse immediately and thoroughly with hose, if available, and apply water liberally. Insure proper rinsing by scrubbing the surface with a clean fibre brush, washing out the brush often in clean, cool water. Then, using a clean bucket and brush, apply a bicarbonate of soda mixture to neutralize acid residue. Rinse the soda-water solution with clean water, or leave it for rainwater to wash off.



The monument will dry in a short time, and what was a stained and dirty memorial only a few minutes before, will show vast improvement in appearance and will be well worth the brief amount of time and work required in cleaning. CAUTION: Sandblast cleaning for steeled and rock-pitched work is not recommended, since this only removes surface dirt and leaves in the stone's pores any stains which have penetrated the surface. Sandblasting also removes any contrast between the surface and any carving and lettering. Also, the edges of carving and lettering may be damaged, and uneven blasting may cause the stone to darken irregularly. Also remember to clean sandblast filler from stone lettered in the cemetery. This should be an integral part of any cemetery lettering service.



Dealing With Various Stains And Problems

1. INSPECTING MONUMENTS

When a monument arrives at your business, inspect at once to be sure the monument has not been broken or stained in transit. A careful inspection of the crating and wrapping may indicate whether damage occurred before or after it left its point of origin. If any part of the shipment is damaged, make note on the freight bill and immediately file claim with the carrier.

2. REMOVING STAINS FROM GRANITE

Do not store monuments in the crate. Take steps immediately to remove any stain, of any description, for the longer it sets, the more difficult will be the removal. All stains on blank dies should be removed before carving and/or lettering. On a polished monument, where the stain falls in the panel or carving area, the panel or carving area should be flashed first, as it will be easier to remove the stain after the polish has been broken. However, be sure all stain has been removed before proceeding with carving and lettering.

3. DEALING WITH TRANSPORTATION STAINS

These are streaks or spots penetrating into the surface and are usually caused by soot or dirt from trucks or trains. Washing with a good household or commercial detergent will remove these stains. Also, weak oxalic acid may be used.

4. HOW TO REMOVE OIL, RESIN, BOARD STAINS, ETC.

Oil in one form or another accounts for the major portion of stains found on granite. The most satisfactory way of removing oil, resin and board stains is the poultice method. Prepare a paste by mixing Fullers Earth or Plaster of Paris and lacquer thinner. Place the surface to be poulticed in a horizontal position (as on a sandblast banker). Apply the paste 1-in. to 2-in. thick over the entire stained area. Pour dry Fullers Earth or Plaster of Paris around the outside edges of the poultice. Allow to dry completely. If stain has not been removed when the poultice is dry, repeat the above steps.

POULTICE DEMONSTRATION

Apply poultice, in this case it is made of Plaster of Paris and white gas, 1-in. to 2-in. thick over the entire stained area.

Dry Plaster of Paris is placed around the outside edges of the poultice to hold the fluid within the area of the stain.

Ignite the poultice and wait one hour before removing it. Heat from the burning poultice causes the granite's pores to enlarge and the oil or other substances to thin.

5. BURNING POULTICE

Place poultice over the stained area as below, left page. If speedy action is required, set fire to the poultice and let it burn until it goes out. Wait about one hour until the poultice is completely dry, then remove. If stain has not disappeared, repeat the entire operation. Heat from the burning poultice causes the granite pores to enlarge and the oil or other substances to thin. It may sink in a little deeper — but it will come out quicker.

Do not apply heat, as with an acetylene torch, directly to the stone, whatever the stain may be. This can cause the heavy residue in the stain to form a stubborn film on the stone, sealing the pores and trapping the stain. When this occurs, it is almost impossible to remove the stain.

6. ALWAYS CLEAN THE GRANITE FOLLOWING POULTICING

Whatever poulticing method is used, it is essential that the stone be thoroughly cleaned to remove any organic material that may remain on the surface. The spot where the poultice was applied should be washed with solvent, followed by a thorough scrubbing with detergent to remove the solvent; flush with plenty of cold water, and allow to dry. Failure to clean the spot where the poultice was applied may result in a spotty or cloudy appearance once the monument is in the cemetery.

7. VERY STUBBORN STAINS

Some manufacturers suggest that when a regular poultice has failed to remove a deep-seated stain, they have successfully used a poultice of Fullers Earth, or Plaster of Paris, and Cut-Zit Paint Remover to form a paste. Apply as other poultice and allow to dry. This is usually not done except as a last effort.

8. REMOVING STAINS NEAR LITHICHROMED CARVING OR LETTERING

Do not allow lacquer thinner or paint remover to come in contact with lithichromed surfaces. Try white gasoline and Plaster of Paris poultice. If this does not remove the stain, fill in carving and letters with water filler or Lithco Face Mask; then apply stronger lacquer thinner or paint remover poultice combined with Fullers Earth.

9. REMOVING "ROOF DRIP" AND OTHER WATER-SOLUBLE STAINS

If it is determined the material causing the stain is water soluble (such as the common roof-drip stains) these can be removed by mixing Fullers Earth or Plaster of Paris with water to form a paste; apply the paste 1-in. to 2-in. thick over the stain, pour dry Fullers Earth or Plaster of Paris around the outside edges of the poultice. Keep in a warm place until dry. A heat lamp may be used to speed the drying process in cold weather. Repeat if necessary.

Occasionally a brown water stain will appear on monuments on outdoor displays where wood strips or other porous materials are used between die and base causing a water trap. Raise the die on blocks, or turn joint up until accumulated moisture evaporates. In the winter, the die should be placed inside near heat source to facilitate this drying. The same Fullers Earth and water or plaster and water poultice may then be applied to remove any brown stains remaining. The joint may be waterproofed before returning to the display or to the cemetery.

Water stains may also result from faulty sealing of joints when work is set in the cemetery. Any break in the caulking will form a water trap. This necessitates the raising of the die on blocks until the joint has been completely dried; a poultice may be used to remove any brown stains; then reset, making certain that the caulking is tight and that adequate space between the base and the die is provided. We suggest the use of 3/16″ or 1/4″ plastic spacer blocks between the base and the die to provide proper spacement and best jointing.

10. REMOVING RUST AND RUST STAINS

Thoroughly mix one part Liquid Zit with six parts cold water (spring or well water). Apply to entire surface of the monument. Allow to remain 10 or 15 minutes and keep wet at all times. Scrub off with fibre brush and plenty of cold rinse water. Where steel shot are imbedded in carving or lines and showing rust, the Liquid Zit can be applied with small artist's brush to each shot. Daub the Zit-water solution on the shots; leave about 15 minutes; then brush off with water or Vapor-X crystal cleaner followed by thorough clear water rinse.

Do not use LIQUID ZIT full strength on Elberton Blue Granite. It will cause the granite to look dark and wet.

11. CLEANING WEATHERED OR EXTREMELY DIRTY MONUMENTS (Trees, Flowers, Birds)

Mix thoroughly one part Liquid Zit with four parts of cold water (spring or well water). Apply the solution to the entire surface of the stone. Allow to remain 10 or 15 minutes and keep wet at all times. Follow this application with a bath of Vapor-X solution (3 handsful of crystals mixed in 10 quarts of water); scrub thoroughly; then rinse with plenty of cold water. Repeat if needed. In case of algae, moss or other difficult accumulation, a heavy-duty wire brush may be used on steeled or axed finishes. CAUTION: Use only a few light strokes with the wire brush, or the finish will be permanently damaged. *Do not* use a wire brush on *polished finishes,* or serious damage may result.

12. TOBACCO, BLOOD AND BURN STAINS

Stains from tobacco juice, blood, or burns such as those caused when a lighted cigarette is laid on the stone, are among the most difficult to remove. In fact, the only practical way of removing them is by steeling, axing, or polishing the surface over again. Of course, this is often quite expensive and requires additional handling and labor. Therefore, anyone handling or working around stone should be constantly reminded to do their best to prevent careless staining by tobacco, blood or burning.

Preventive Maintenance

Air pollution, soil, and water pollution are increasing at an alarming rate as our population grows and industrialization spreads. A monument that has not been properly cleaned of organic solvents and residue forms a natural trap for airborne pollutants which, in time, will stain and darken the stone.

Even a monument that is clean when set in the cemetery will receive a regular "fallout" of airborne pollution, smoke and smog, and industrial gases. We know that a clean, shiny automobile parked outdoors for thirty days will accumulate a greasy coating of "traffic film", even though the car is not driven in that period, and even though it may have rained several times during that time. Therefore, to expect a monument set in a cemetery to "clean itself" under present-day conditions is not reasonable.

Some cemeteries are offering periodic cleaning of monuments as part of their perpetual care program. Some retail dealers offer a full cleaning program, both as a profitable operation and as a matter of good customer relations. However, the fact remains that the care of monuments, once they have been set in the cemetery, is left very largely to chance and the elements.

It is strongly recommended that the monument retailer take every precaution to see that the monuments he sets are free of all residue, dirt and contamination. Additionally, the monument retailer should encourage the purchaser of the monument to maintain some common-sense preventive maintenance. If the average monument is thoroughly scrubbed several times a year with clear water and a good household detergent, rubbed briskly with a fibre brush and then properly rinsed, practically all of the airborne pollution that has settled on the monument can be removed before staining takes place, and the monument will look good year after year. In this case, cleanliness is akin to permanent beauty of the family memorial.

Commercial Cleaners

There are a number of good cleaners available through Granite Industry supply houses and hardware and household supply stores. Among these are:

1. Vapor-X Crystals — For general stains, particularly on steeled or axed surfaces
2. Speed-X Crystals — For more stubborn stains
3. Oxalic Acid — Especially useful on rust stains
4. Liquid Zit — For rust, bird droppings, and other stubborn stains
5. K2R — For oil stains
6. The Remover (Brand Name) — For oil and board stains
7. Fullers Earth (or Plaster of Paris) & Lacquer Thinner — As poultice for oil, resin and board stains.
8. Naphtha or White Gasoline — May be used in lieu of lacquer thinner in poultice for oil, resin, and board stains; may be used in liquid state to remove filler.
9. Gulf Stoddard 66 — To remove filler
10. Pine Ammoniated Cleaner/Stripper — For use after filler or stains have been removed

Although many of these are brand names, they are NOT THE ONLY cleaners of their specific types. Many cleaners of the same genre may work equally well.

The Vapor-X crystals, produced by the Hoffman Company, are widely used by Elberton manufacturers and may be purchased at Elberton Granite Industry supply firms. The crystals are very effective and non-burning if properly used. The strength of the Vapor-X solution used on polished surfaces is different from that used on steeled, axed or rock pitched surfaces. Whatever the solution, the crystals should be mixed with clear, cool, rain, or well water, if possible, in heavy plastic or wooden buckets.

FOR POLISHED SURFACES: Prepare a weak solution of 4 tablespoonsful in 10 quarts of clear, cool water. Cover polished surfaces completely with the solution, or the stone will dry in light and dark streaks. When using the stronger solution on steeled or rock pitched tops and ends, keep rinsing the polished surfaces to avoid streaking.

FOR STEELED, AXED OR ROCK PITCHED SURFACES: Use 3 average handsful to 10 quarts of clear, cool water. (The manufacturer recommends 5 ounces of the crystals to 3 quarts of water.)

The Hoffman Vapor-X Company also produces LIQUID ZIT recommended for removing sap, rust, and board stains.

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