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**INSTRUCTIONS FOR PERIODIC MAINTENANCE TREATMENT:
RECOMMENDED SCHEDULES, MATERIALS, AND METHODS**

Prepared For

Title of Sculpture: SONG OF THE EARTH

Artist: Tom Gibbs

Location: University of Central Arkansas, Conway, Arkansas

CONTENTS

INTRODUCTION

WHY IS MAINTENANCE NECESSARY?

SUMMARY OF BASIC MAINTENANCE PROCEDURES

RECORD KEEPING

WASHING

APPLICATION OF PASTE WAX

A NOTE ON THE GRANITE COMPONENTS

LIST OF SUPPLIES

INTRODUCTION TO THE MAINTENANCE GUIDELINES

These maintenance guidelines are written with the aim of keeping SONG OF THE EARTH in the best possible condition. Because the sculpture group has not been outdoors for very long, it has not corroded or deteriorated very much.

If the sculptures were not maintained, over time the bronze and the steel would begin to corrode. The bronze would eventually become green and streaked, ultimately resulting in pitting and etching of the metal. Paint on the steel sculpture would weather and deteriorate, and the steel would become rusted, with resulting popping and flaking of the artist-applied paint. Fortunately, the original artist-applied surfaces on the sculptures are still intact, and SONG OF THE EARTH looks very close to the way it did when it was made. With regular, twice a year maintenance, as was demonstrated on October 9, 1997, it will be possible to keep this sculpture group in good condition.

Many sculptures that are allowed to deteriorate outdoors need to undergo conservation treatment. For these sculptures, conservation treatment is the first step towards halting deterioration and restoring an appropriate appearance to a work of outdoor sculpture. Conservation treatment involves more complicated work than routine maintenance. Conservation treatment usually involves removing or reducing corrosion products, reworking the patina, and applying protective coatings. Conservation treatment is generally much more time consuming and expensive than maintenance. Since SONG OF THE EARTH is still in very good condition, now is the time to begin maintenance treatment, and probably avoid the need for conservation treatment in the foreseeable future. Maintenance work on a sculpture is therefore very cost effective over the life of the sculpture.

Important

It is very important to note that these guidelines are intended for SONG OF THE EARTH only. These steps should not be applied to other sculptures made of other kinds of materials, such as different kinds of metal, stone, concrete, wood, or plastic. It is always very important to consult with an art conservator about the most appropriate methods for maintaining any work of art. If a bronze work is green or pitted, these maintenance steps will do little to halt deterioration. Never try out other commercial cleaning agents or mechanical means to remove corrosion products or other foreign material from metal, as these can inflict a lot of harm to a sculpture's patina or even to the metal itself.

WHY IS MAINTENANCE NECESSARY?

Regular maintenance is necessary because of the unrelenting effects of the outdoor environment. Pollution, moisture (rain, snow, mist), ultraviolet illumination, and a variety of other factors are constantly impacting upon a sculpture.

Every sculpture has its own particular problems and needs, but the general ongoing problems found on many outdoor bronzes are the following:

- Breakdown of an applied protective coating from natural weathering; opens the way for corrosion activity.
- Dirt build-up, including leaves and other debris, act as moisture retainers at the surface of a sculpture, promoting corrosion activity.
- Handling by the public, through touching or climbing, wears away the protective coating, the patina, and over time, even the metal itself.
- Flaws in the casting, where the metal is porous, are often sites of corrosion activity.
- Areas of investment² seepage can be sites of corrosion activity.
- Joints in the sculpture can be sites of corrosion activity, due to breakdown of the coating in these areas (from moisture retention).
- Graffiti may be an ongoing problem on some sculptures.

Regular maintenance treatment addresses these issues and helps to keep them from becoming serious problems.

October 1997

² Investment: A plaster-like material on the inside of bronze sculptures, left over from the casting process. During alternating periods of wetness and drying, investment can be dissolved on the interior, then drawn up through the porous bronze metal, where it recrystallizes on the surface.

SUMMARY OF BASIC MAINTENANCE PROCEDURES

WEEKLY

- Check for and remove debris (mowed grass cuttings, leaves, twigs, etc.) from on and around the sculpture.

TWICE YEARLY – SPRING AND FALL

- Inspect the sculpture for outbreaks of corrosion activity and other damages; record any problems on the Sculpture Maintenance Record.
- Wash the sculpture.
- Apply paste wax to the surfaces of the bronze and the steel components.

EVERY FEW YEARS

- Schedule a check-up by a professional conservator to help assess the overall success of the maintenance program, and if necessary to correct any problems with the sculpture.

RECORD KEEPING

Before beginning maintenance treatment, the sculpture should be examined using the Sculpture Maintenance Record form. This is designed to help you quickly (but carefully) examine the various sculptural elements making up SONG OF THE EARTH and to look for any condition problems.

It is important to fill out the form, as it helps to keep a record of the condition of each sculptural element over time. It will help you to know whether a particular problem or occurrence is ongoing, and how much it is advancing. This will also be very useful information to a sculpture conservator, should they need to address any condition problems later. The forms can be kept in a separate, permanent file, or in this Maintenance Guidelines Kit.

This maintenance kit includes several copies of the Sculpture Maintenance Record form. Because SONG OF THE EARTH is a complex grouping with different elements, it is best to fill out a form for each element separately – the bronze piece, the steel piece, and the granite wall. You can also make separate forms to record the condition of the concrete, and the small river stone element near the bronze piece. Forms have already filled out for each of the three main sculptural elements, based on our examination of October 9. Keep one blank form as a master copy, to be used to make new blank copies as necessary.

The check sheet is organized according to condition problems. If you see a particular condition problem on a sculptural element, check the appropriate box, and then indicate whether the problem affects the "Fabric of the Sculpture", the "Patina", "Paint" or the "Applied Coating". For SONG OF THE EARTH, these are defined in the following way:

"Fabric of Sculpture" means the main body of each sculptural element – that is, bronze, steel, or granite.

"Patina", means the brown coloration on the bronze piece. (This is a color that was created by the artist after it was cast.)

"Paint", refers to the paint applications on the tall steel piece.

"Applied Coating" means the wax coating the bronze and on the painted steel.

Often, a condition problem affecting one aspect of the sculpture will also affect another – for example, a small outbreak of corrosion on the bronze will also mean that there is a problem with the patina in that area.

Give a brief written description of the area of the sculpture where the problem is found – for example "Northwest corner, approximately 6 ½ feet from the ground". Because the sculpture is abstract, it is very difficult to verbally describe an area on the piece. In order to accurately record damages and problems, it is recommended to obtain photographs (8"x10" if possible) of each sculpture, showing all four sides. Make photocopies of the photographs and mark in different colored ink where specific problems occur.

WASHING

Materials and Equipment

- A non-ionic detergent, such as Orvus Paste or Triton X-100 (refer to List of Supplies); if these cannot be obtained, Shaklee Basic H, or Ivory liquid may be used.
- A clean rubber or plastic bucket.
- A soft, natural tampico fiber brush – such as a wallpaper paste brush or a 4” natural China bristle brush. Brushes with plastic bristles are not recommended, as the cut-off ends of the bristles have sharp edges that can scratch the wax coating or the patina of the sculpture. If a China bristle brush is used, the metal ferrule should be covered with duct tape so that it will not scratch the bronze.
- A toothbrush, soft bristle.
- A garden hose and nozzle and access to clean water.
- Absorbent, lint-free rags, or paper towels.
- Popsicle sticks (craft sticks).

Procedure

Put a very small amount of the soap into the bucket (approximately a teaspoon per gallon is plenty). Add water to fill the bucket.

Thoroughly wet the sculpture with the garden hose, to wash off loose dirt and dust.

Get your washing brush wet and soapy from the bucket and wash the bronze thoroughly, working from top to bottom. Make sure not to let soap dry on the surface of the sculptures – keep rinsing as necessary with the hose.

Use the toothbrush to get into harder to reach areas. The toothbrush may also be useful for gently scrubbing and loosening tougher deposits (like gum or bird droppings). Pay special attention to removing organic growth from the flat metal base of the large painted steel piece.

If there are tough deposits that don't come off with the brush, these can be removed by very gently scraping with a wooden popsicle stick. Be very careful not to scratch the patina, the paint, or the surface of the metal.

After washing all of the surfaces, rinse the sculpture very thoroughly with the garden hose.

After rinsing, let the sculptures air dry, or pat dry with the rags or paper towels. Pay special attention to drying the crevasses, as these places will tend to stay wet longer.

APPLICATION OF PASTE WAX (Bronze and Painted Steel Only)

Materials and Equipment

- Butcher's White Diamond Clear Paste Wax (Bowling Alley Wax) or Johnson's Paste Wax; do not use Butcher's Boston Polish, as it isn't suitable for use outdoors.
- Mineral Spirits.
- A 1 ½" – 2" China bristle paint brush; tape the ferrule with duct tape to avoid scratching the wax coating.
- A 4" China bristle brush; tape the ferrule.

Important: these brushes should be used for wax only, and should be clearly labeled as such.

- A clean plastic one-gallon milk or water container, cut in half to form a palette.

Procedure

The sculptural surfaces must be completely dry and free of dirt and dust. If dusty, use a soft brush to dust them off.

If the wax in the can is fairly soft, it may be used directly out of the can. If it is too hard for the brush to make a mark in it, take out an amount about the size of two golf balls and put it into the plastic palette. Add a very small amount of mineral spirits (a thimble full or less) to the wax. Let it soften the wax a little; you can also stab at the wax with a popsicle stick, to help break down the wax and get it dissolved in the mineral spirits. If it still seems too hard, add a little more mineral spirits, until it comes to a workable consistency.

With the 2" China bristle brush, apply a very thin layer of wax to the bronze, using the end of the brush in sharp but gentle jabbing motions, and alternating diagonal strokes. Be careful not to produce a thick build-up of wax. Also be careful not to use too much mineral spirits, or the wax will be too thin and will not dry for a very long time. As you apply the wax, the surface of the bronze will become less glossy and will look matte.

When the entire sculpture has received the wax, allow it to dry thoroughly. Drying time will be dependent on the temperature and humidity outside. The wax may be considered dry when it does not "pull" when lightly touched.

When the wax is dry, gently buff the entire surface with the clean 4" China bristle brush, until a soft sheen is achieved. The use of cloths to buff the bronze sculpture is not recommended, because the thin brown patina on the slightly raised areas of relief could easily be removed from excessive, or continuous rubbing over several maintenance cycles.

A NOTE ON THE GRANITE COMPONENTS

The artist, Tom Gibbs, recommended the use of SLX100 Water & Oil Repellent, applied to the granite wall once per year. The purpose of this material, according to the product literature, is "to prevent staining by water-borne or oily substances, and many types of graffiti"³.

This conservator feels that it may be better not to use this material on a routine basis, for several reasons: 1) The product, a silane, is a very toxic material in its liquid state and considerable precautions should be taken in its application. It would be inadvisable to use this material without proper training. 2) Repeated application of a consolidant (a general term for this type of product), can lead to uneven build-up within the stone. Although the product is of the "breathable" type (very important for use with stone), it can still affect the porosity of the granite to a degree, which could have adverse consequences at a later date. 3) There is presently a hazy white material in the granite (refer to Sculpture Maintenance Record for description and location). The cause of the haze is not known, but it could be related to a consolidant or other chemical application. 4) Finally, the use of this material may be advantageous in an environment where graffiti and vandalism are problems. However, UCA Conway does not appear to be such an environment. The examination in October of 1997 revealed no indications of vandalism.

Generally, any type of consolidant is used only if stone is in danger of severe deterioration, or if vandalism is a problem. At present, we recommend simply washing the granite wall to remove dirt and any other accretions. It would be advisable to consult with a specialist in stone conservation to determine whether any other treatment is indicated.

³ Stand Off brand SLX100 Water & Oil Repellent; I believe this is a ProSoCo product. (MRM)

LIST OF EQUIPMENT AND MATERIALS

Note: It is recommended to store all of the materials and equipment in a permanent "maintenance container", such as a large plastic bin or toolbox. This way, all of the supplies will be on hand and clean, having been used for no other purpose than sculpture maintenance.

Equipment

- Access to **clear running water**, sufficient **garden hose** length to comfortably reach the sculpture, a **nozzle**.
- A clean rubber or plastic **bucket**.
- A **wallpaper brush** with natural tampico fibers (not plastic), or a good quality **4" natural China bristle brush**; tape the metal ferrule with duct tape.
- A **toothbrush**, or several, of varying sizes.
- **Popsicle sticks (craft sticks)**.
- Another **4" natural China bristle brush**; tape the metal ferrule with duct tape.
- One or two **2" natural China bristle paint brushes**; tape the ferrules.
- Disposable **vinyl gloves**.
- **Duct tape** – for taping the metal ferrules.
- **Lint-free rags** or **paper towels**.
- A suitable **container** to hold all of the supplies and materials (storage bin, big tool box, etc.).

Materials

- **Soap: Ivory Liquid** or **Shaklee Basic H** (available from local distributors), or **Orvus Paste** or **Triton X-100** (these two are available from Conservation Support Systems, P.O. Box 91746, Santa Barbara, CA 93190, 800-682-2064).
- **Wax: Johnson's Paste Wax** or **Butcher's White Diamond Bowling Alley** or **Clear Paste Wax** (Butcher's Wax is available by calling Shield Packaging, 508-949-0900); do not use Butcher's Boston Polish, as it isn't suitable for use outdoors.
- **Mineral Spirits**.