



Roger Baird

Figure 1. Dudley Carter performing art-in-action at his 100th birthday party.

Rescuing Dudley Carter's Goddess of the Forest

Arno P. Schniewind, Roger Baird, and Dale P. Kronkright

ABSTRACT: The Goddess of the Forest, a massive sculpture created by Dudley Carter from a large redwood log as part of the "Art in Action" program during the World's Fair held in San Francisco 1939/40, was later placed into the city's Golden Gate Park where it remained until 1986. By then the Goddess, which stood 26 feet tall and had a girth at the base of 21 feet, showed serious signs of distress in the form of extensive decay and stood with the aid of props. It was decided to take the Goddess down and move it to San Francisco City College which already had another Carter sculpture, the Ram. City College also owns a major mural by Diego Rivera, created at the same time as the Goddess, which shows Carter in the process of creating the Ram with his double-bitted axe. Dudley Carter, who was 95 in 1986, was called to City College to devise a plan for rescuing what could be rescued, and subsequent work was carried out according to his instructions. It involved cutting about 10 feet off the bottom, and retaining only a "half shell" of the upper part, since extensive interior decay had left only an outer shell of sound wood 1 to 4 inches in thickness. An armature was constructed to support this shell. Areas of major damage to the exterior were filled and inpainted. At present the Goddess has been set up temporarily in the lobby of the City College Little Theater, facing the Rivera mural. There it will await being moved to a permanent location yet to be decided, but with the stipulation that it must be an interior location to avoid further decay.

Dudley Carter the Woodsman

DUDLEY CARTER WAS BORN IN 1891 IN New Westminster, British Columbia. He was one of nine children. His family ran a logging operation in British Columbia, and Dudley Carter began working in the woods at an early age, starting out as a skid greaser when he was six. By the time he was ten years old, he was felling small trees to be used in building the roadways where oxen teams skidded the harvested logs to the edge of waterways for further transportation. At age sixteen he became a regular faller, and a logging foreman at age eighteen. Eventually, Dudley Carter taught himself to become a forest engineer and timber cruiser—a person who takes inventory of harvestable timber in a forest—and worked as such in the woods of the Pacific Northwest for a good part of his life.

At some point during Dudley Carter's childhood, his father took a position as school teacher in

Alert Bay, a settlement of the Kwakiutl people. Alert Bay is on small Cormorant Island which is located between Vancouver Island and the Canadian mainland. Aside from more recent revivals, the Kwakiutl maintained their original native traditions, particularly as it concerns the art of carving, longer than other peoples of the Pacific Northwest (*Baker 1990*). Thus Carter was able to observe the Kwakiutl carvers practice their art and craft while creating totem poles and other artifacts, and he witnessed their potlatches which still continued at the turn of the century. This experience was to have a profound and lasting influence on Dudley Carter.

Dudley Carter the Sculptor

It was not until 1930, when he was 39 years old, that Dudley Carter became seriously interested in carving. The occasion was a contest sponsored by the *Seattle Times* and a soap company, and the

object was to create a carving out of a five-pound piece of soap. First prize was to be \$50 and two months' tuition at the Seattle Art Institute; Dudley Carter won second prize which was worth only \$20, but he was given two months at art school anyway because it was felt that he showed real talent. He entered the same contest again the following year and this time won first prize. By 1932, he created his first major wood sculpture "Rivalry of the Winds" which was purchased by the Seattle Art Museum. For the next forty years or so, Dudley Carter was to continue in his dual careers as woodsman and as sculptor, and he remained an active sculptor past the age of 100, almost until his death shortly before reaching the age of 101.

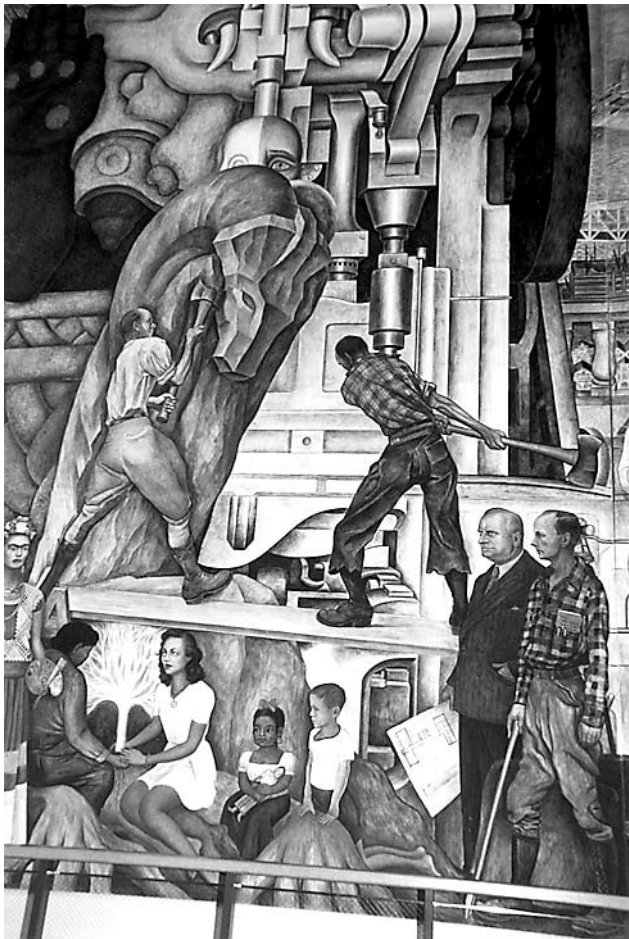
As a woodsman, Carter the sculptor chose wood as his medium, and the double-bitted axe as his favorite tool (*fig. 1*), although he also used the adze

and the chisel. Much of his work was strongly influenced by the totem poles he watched being carved in his youth, where he employed what he called the three principles of design (*Carter n.d.*). The first principle arises from the traditions of the native carvers, who used stone tools until the European settlers brought them more efficient ones made of steel. With stone tools, it was expedient to minimize the amount of wood that had to be carved, so the head is made to fill the entire diameter of the log, and limbs are folded in ways to conform as much to the original log shape as possible. The second principle arises from the representation of legends, family histories, and beliefs, including a procession of characters which interlock in a continuous design from one end of the log to the other. The third principle, related to the first, was that spaces in one character that would have required deep cuts would be filled with smaller characters.

Dudley Carter and Diego Rivera

During the mid-thirties Dudley Carter worked on various Federal art projects in San Francisco. He carved the large sugar pine panels that formed the façade of the Shasta-Cascade pavilion at the San Francisco World's Fair of 1939/40. During the Fair he carved a monumental sculpture, "The Ram," as part of the Art-in-Action program devised by the architect Timothy Plueger who had oversight of artistic matters at the Fair. Also taking part was Diego Rivera who painted his large mural "Pan American Unity" at this time. Diego Rivera was so impressed with Carter's skill with the axe, that he incorporated three views of him in the central panel of the mural: two carving the ram, and one in his role of woodsman standing next to Timothy Plueger. (*fig. 2*) Rivera felt that Dudley Carter embodied the ideal of the pure North American artist, drawing on native artistic traditions and using traditional tools, free of European influences.

Timothy Plueger had intended the mural for the future library of City College of San Francisco, where he had already designed several of the early buildings. This proved to be impossible, and eventually the mural was installed in the lobby of the Little Theater. Dudley Carter donated "The Ram" to City College because its mascot happened to be a ram. The sculpture stood outside on the campus, changing locations from time to



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Figure 2. Section of the Diego Rivera mural "Pan American Unity" showing two views of Dudley Carter as sculptor, and another view as woodsman.



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Figure 3. *The Ram after its restoration.*

time. Students adorned it with coats of paint, usually in the school colors of red and white, but on eves of big games, pranksters from other schools would add their own colors. Once “The Ram” was even tarred and feathered, followed by burning off the feathers. The result was seen with dismay by Carter when he visited the campus in the early 1980s, and he offered to assist in a restoration of “The Ram.” This came to pass in the spring of 1983 when Dudley Carter, with the help of Roger Baird, used his double-bitted axe to chip off the paint layers (which had reached a thickness of as much as a quarter of an inch) to once again expose the natural redwood of the sculpture. “The Ram” is now to be seen in the lobby of Conlan Hall on campus. (fig. 3)

The Goddess of the Forest

During the World’s Fair in San Francisco, Dudley Carter also created another sculpture, the “Goddess of the Forest.” It was carved from a single large redwood log, and measured 26 feet in height and 21 feet in circumference. Although the figure of the Goddess herself extended over the entire height, the sculpture has much resemblance to a totem pole. It embodies the three principles of design discussed above, smaller images of an owl and a bear filling what would otherwise have been deeper spaces cut into the sculpture.

The Goddess was donated to the City of San Francisco, and until 1986 stood in Linley Meadow in its Golden Gate Park. (fig. 4) Carter had specified that the sculpture be set on blocks to provide for air circulation at the base. However, it was set squarely on a concrete pedestal, and what was worse, a finishing fillet of concrete was added at the base rising above grade to form what amounted to a shallow pan. This allowed rain water and sprinkler water to collect at the base making ideal conditions for decay.

Dudley Carter inspected the Goddess in 1983 and found extensive decay (Carter 1983). In fact, he felt that the lower half of the sculpture was decayed so much that there was little or no chance of it being repaired. Test borings with a 14-inch drill bit at various heights indicated that only the surface layers were sound and that possibly the entire core was seriously decayed. The Goddess was propped up by two-by-fours while a solution was being searched for.

Rescuing the Goddess

Dudley Carter offered to take an active part in any restoration efforts, and eventually devised a plan for salvaging what could reasonably be salvaged. The plan provided for cutting off and discarding approximately 10 feet of the sculpture from the base, saving only the front half of the upper section, hollowing this out to remove all of the decayed wood, and constructing a system of ribs to form a support for the remaining half-shell.

This plan did not find universal acceptance. Two conservators were consulted, one in person, and one by mail, and both expressed themselves



Figure 4. The Goddess of the Forest in Golden Gate Park, San Francisco, circa 1975. Its original height was roughly equal to that of a three-story house with a flat roof.

strongly against the plan. Their feeling was that somehow the sculpture should be restored in its entirety. However, considering the massive size and enormous weight of the sculpture and the very real problems involved, Dudley Carter's views prevailed. Financial and procedural questions had to be settled, but finally permission was obtained for removal of the sculpture to City College, and this was done in the summer of 1986. Dudley Carter came to City College and marked the exact locations where the sculpture was to be cut.

The vast majority of the ensuing work was carried out by Roger Baird, with periodic visits by Arno Schniewind to give technical advice. First, the sculpture was cut to its final length. The entire interior turned out to be severely decayed, leaving an outer shell of sound wood of approximately 1 to 4 inches in thickness. (*fig. 5*) This can be explained on the basis that the interior was always wet, creating ideal conditions for decay, whereas the surface layers had ample opportunity to dry out between rains thereby preventing decay fungi from being active in the surface zones.

The Goddess had been placed face down so that it could be worked on from the back. Parts of the back were removed initially, leaving only some ribs of material to hold the shell together and thus facilitating removal of all of the decayed wood from the interior. Eventually the ribs were removed also, reducing the sculpture to a half shell. Early in 1988, Arno Schniewind enlisted the help of Edward F. Diekmann, structural engineer, who designed an armature to hold together the half shell. This consisted of a backbone of structural lumber connected to cross pieces joining the free edges of the half shell, and a series of spokes extending from the backbone to intermediate locations on the shell. The structural members were connected to each other and to the sculpture with metal plates, screws, and bolts. (*fig. 6*) Some splits in the shell were reinforced with sheet copper and screws, and a few particularly difficult areas were backed up with plywood and fiber glass.

The sculpture remained outside until 1991, protected from the elements by a tarpaulin. One evening one of the security guards on campus noticed smoke emanating from the sculpture. Investigation showed that a homeless person had not only found shelter inside the sculpture, but had also made a fire directly on its wood. Fortunately this was discovered early enough to prevent major damage, but a small hole had been burned through to the outer surface of the Goddess.

In the spring of 1991 the sculpture was moved into the lobby of the Little Theater in front of the Diego Rivera mural, where it was placed flat on its back so that work could begin on the frontal surfaces. This event marked the beginning of in-



Emmanuel C. Montoya

Figure 5. Bottom section of the Goddess cut off during its removal from Golden Gate Park. Note how the section literally fell apart because of the extensive decay.

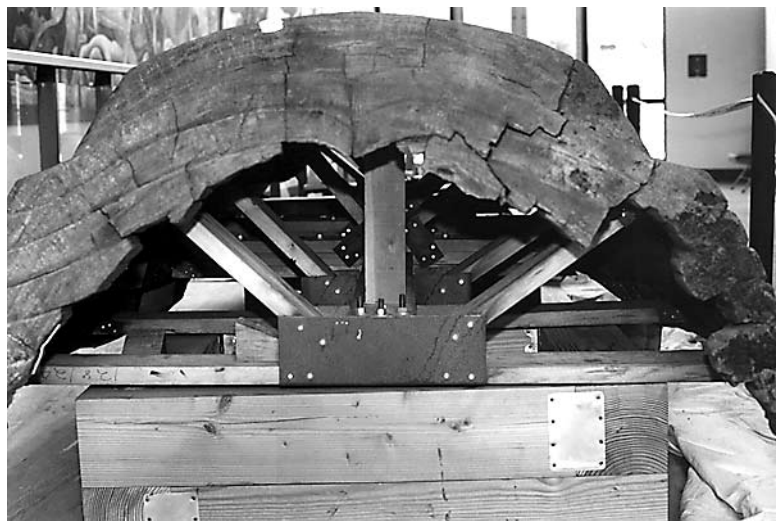
volvement by Dale Kronkright, consisting initially of advice on materials and techniques for loss compensation and inpainting, and culminating in a joint effort of all authors to complete the work.

The Goddess had sustained various kinds of damage to its surfaces. The carved graffiti were lost with the lower portion, but there were holes from prior test borings, bullet holes, the burn hole, disfiguring dents suffered while placed face down, and an area on each shoulder where the removal of the back half had created an awkward silhouette. It was decided to fill only the more disfiguring losses. Information on various techniques of gap filling can be found in the literature (Hatchfield 1986, Grattan and Barclay 1988, Barclay and Mathias 1989, Storch 1994). It was decided to use Rohm & Haas Acryloid B72 in toluene with glass microballoons for the smaller areas, and Dow Corning 3110 RTV Silastic silicone casting rubber with Catalyst 1, also with glass microballoons, for the larger areas. The glass microballoons used were Emerson & Cuming Eccospheres®, Eccor Grade. All fill areas were first primed with a coat of Rohm & Haas Rhoplex AC-234 in order to permit future removal of fill material without damaging the wood substrate.

The surface of the Goddess of the Forest was heavily textured because the softer springwood had eroded more deeply than the harder summerwood. Accordingly, infills had to be carved to a matching texture which was done using carver's knives and chisels, engraver's tools, scalpels and dental tools. Since the sculpture had been carved from an old-growth tree, the growth rings showing on the surface were very narrow, making the carving a very time consuming effort.

For some of the larger loss areas, a different approach was taken. First, an intact area adjacent to the area of loss was dusted with wheat starch powder to act as a release agent. Farocolina modeling clay was used to create a mold "dam." Silastic casting rubber was then mixed and poured into the dam. When the Silastic had set, it was peeled away from the dam. The area of loss was given a barrier coat of Rhoplex AC-234 which was allowed to dry. The Silastic negative mold was filled with a mixture of Silastic and glass microballoons, heavily bulked to be paste-like rather than the putty-like consistency used for the larger fills. The "loaded" mold was placed over the area of loss, the air was squeezed out, excess filler was wiped away and the mold was held in place with modeling clay. The new positive mold set in about two hours, after which the negative mold and modeling clay were removed and final details were carved.

Before carving, the fills made with B72 had a



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Figure 6. Top view of the Goddess showing the radiating spokes of the armature.



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Figure 7. *The Goddess of the Forest as installed in its temporary location in the lobby of the Diego Rivera Theatre.*

smooth appearance, but upon carving it was discovered that bubbles had formed so that the carved surface had holes in it. The Silastic fill performed better, although initially it tended to be rather soft and hence somewhat difficult to carve. Additional experience showed that loading the Silastic so heavily with microballoons that the mixture became stringy resulted in firmer fills that were more easily carved.

Inpainting was done with Bocour Artist Colors' Magna Acrylic Resin Paint, using titanium white, siennas, ochres, umbers, and ivory black. Liquitex matte acrylic varnish was used as an extender and matting agent, and mineral spirits were used as thinner. The appearance of the inpainting, especially in some of the larger loss areas, was very de-

pendent on the nature of the lighting and the angle of viewing, and may need to be touched up when the sculpture is moved to its permanent location. The filling and inpainting was completed in August 1993, and in November of 1993 the Goddess of the Forest was set upright, and installed in the Little Theater (now renamed the Diego Rivera Theatre) according to a design by Samuel Harrison, AIA, City College Architect. The sculpture was provided with a plywood back and top closure and fastened to the solid concrete guardrail of the upstairs viewing gallery. In this position the Goddess of the Forest faces the Diego Rivera mural including the images of her creator while waiting for a permanent location, possibly in the new City College library now under construction. (fig. 7)

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