



By Richard Wolkomir

## She's an artist whose explosives make a lasting impression

*Evelyn Rosenberg gets a big bang out of her art. She creates sculptures from metals that are molded by explosions in the desert*

Squinting into the brilliant New Mexico sun, Evelyn Rosenberg ignores the mobile M-110 howitzer parked beside the brown mountain. She also disregards the blown-apart jet fighters strewn across the desert. Instead, she anxiously watches several technicians laying explosives atop four metal sheets she has positioned on the stony ground. For the past three years she has been visiting this firing range, which is operated by the New Mexico Institute of Mining and Technology in the arid hills above Socorro. Here the school's Terminal Effects Research and Analysis group slams missiles into tanks and jets, studying the results. But Rosenberg, who has the tawny eyes and long, center-parted brown hair of a Saharan Tuareg, is not interested in "terminal effects." She is an artist, and this violent landscape is her al fresco atelier, its explosives her oils and brushes. "When those DETASHEETS go off, it'll look like overkill," she tells a visitor as the technicians cut the rubbery sheets of flexible explosive to size.

Until recently, Rosenberg was a maker of etchings that often depicted mythological or zoological themes. Now she is pioneering a novel art form, which she and her husband have dubbed "detonography" after much consultation with thesauri and dictionaries. Detonography—art created by explosives—is the off-

Rosenberg shows work in progress outside her New Mexico studio. Face emerges from hole made by blast.

*Photographs by Ovak Arslanian*





Over sketch of a recent project, *Forest Floor*, artist places wings, leaves to be imprinted on metal sheet.



A technician hooks up detonating cord attached to "sandwiches" of molds, metal and explosives in desert.

shoot of a new technology. Engineers are learning to use the power of explosives to shape metal parts for airplanes and rockets, weld metals in awkward spots and bond disparate metals into laminated hybrids. Rosenberg detonates DETASHEETS to create stunningly complex metal sculptures expressing the accretion of geologic time, the mysteriousness of beasts, the impulse toward religion, the universality of myth.

The process begins in her studio behind the Albuquerque house that she shares with her husband, Gary, chairman of the neurology department at the University of New Mexico School of Medicine, their two children, Oren, 14, and Mica, 8, and a green parrot named Tukey. Amid the studio's neatly ordered gear—a massive etching press, tongue depressors for mixing ink, hair dryers for drying prints, wrenches, rows of bottled chemicals—Rosenberg draws many of her ideas on paper. She grips the pencil in what might pass for a mechanic's squared-off hand, the forefinger and pinkie wrapped in Band-Aids because of metal cuts. As the pencil darts, hesitates and glides, an image takes shape—perhaps the skeleton of a brachiosaur. Rosenberg repeatedly consults reference books in her library about such things as the curve of a shinbone or the crenulation of a palm frond, but she is more interested in design and artistic effect than scientific accuracy.

When the drawing seems right, she reproduces it in bas-relief on metal tooling foil, pressing out the lines with a chopstick or some other blunt tool. The foil then becomes a template for making a mold. Placing it in a box, Rosenberg pours a tough plaster over it. An

*Richard Wolkomir, who never saw an explosion until he went to New Mexico to report this story, says: "The ground shook, I was a bit stunned."*

hour later, when the plaster has set, she lifts it from the box and pulls off the foil. This hardened block, bearing her original design, is now the "mother mold."

Rosenberg uses a couple of other techniques to make molds. Sometimes she creates forms in sand and pours the plaster directly into them. Other times she sculpts her impressions in clay.

On explosion day, the artist gently loads her mother molds into the back of her Dodge Caravan, along with the sheets of metal—stainless steel, brass, copper or aluminum—that will bear the final images. Then she drives the 70 miles from Albuquerque to Socorro, following the Rio Grande south. The rugged terrain along the way reminds her of the Negev desert: stony plains stretched out under a shimmering sun, with stark brown mountains brooding on the horizon. This scenery is a major source of her artistic inspiration. She points to a shaft of sunlight slanting down from behind a cloud to illuminate a mountain peak. "That's straight from *The Ten Commandments*," she tells her companion, grinning.

Rosenberg grew up far from the Southwest, in the leafy Maryland suburbs of Washington, D.C. After majoring in philosophy and English literature at the University of Maryland, she studied comparative religion at the Hebrew University in Israel, where she acquired her fascination with deserts. It was a stay in India, however, that made her an artist. "I was struck by the Indians' use of art as a stimulus for religious experience," she says. Back in Israel she took a drawing course and then—watching images materialize under her pencil—she opted for a new career, studying art at Columbia University, learning printmaking at the Rochester Institute of Technology, earning a master's degree in art at the University of New Mexico. "I liked





## Creating art from destruction

the hard, physical work of making prints," she says. "I liked getting dirty, too."

Eventually, however, Rosenberg found two-dimensionality limiting. She longed to escape the confinement of flat surfaces and experimented with various ways of doing so. Then one day a tall, graying stranger knocked on her door, carrying some metal plates under his arm. Gideon Sivan was an Israeli military explosives expert. At that time, he was doing research on nonmilitary uses for explosives at the New Mexico Institute of Mining and Technology. He was particularly interested in a phenomenon known since the days of Alfred Nobel, dynamite's inventor. If something is interposed between an explosion and a surface, its image will imprint on the surface. The reason is that an explosion's force flattens whatever it hits—"It squooshes the molecules together," as Evelyn Rosenberg puts it. Even so flimsy an intervening object as a feather will buffer the blast somewhat, leaving the surface behind it slightly less flattened, so that a silhouette of the object appears in relief.

Sivan was pursuing the notion that the principle of explosive imaging might be used for art, but he needed an artistic collaborator. Mutual acquaintances had recommended Rosenberg as an established printmaker whose works had appeared everywhere from the Museum of Modern Art in Haifa, Israel, to leading galleries in Manhattan, Washington, D.C. and Santa Fe. "Gideon arrived just when I was wondering how to create large, three-dimensional prints," the artist says.

Sivan was simply imprinting images, but Rosenberg had grander notions. She wanted to use explosives to press a metal sheet against a mold. "If it worked, I could match the results of bronze casting at a fraction of the cost." The savings would come from eliminating the expensive foundry work of pouring liquefied metals at high temperatures into molds.



Boom! This is what Rosenberg and others in bunker see when explosion goes off. They watch it in mirrors.



Photographer set up camera outside, on top of the bunker, tripping lens when countdown reached zero.

Artist takes metal sheet, sooty but intact and bearing the impression of plaster mold, from explosion site.

Back in studio, Rosenberg works metal after treating with chemicals. Mask protects her from dust, fumes.



"Our first explosions produced just rubble and shrapnel," she recalls. "My husband thought this was crazy, so when I came home from Socorro I'd sneak all this awful stuff into my studio so he wouldn't see it." When Sivan returned to Israel, the institute's Center for Explosives Technology Research asked Rosenberg to carry on his work under their auspices. She was doing all of her blasting on a massive anvil then. She would lay a "sandwich" atop the anvil: first her mold, then the metal plate that would take the image, then a layer of carefully arranged twigs, feathers, leaves, then a rubber pad to smooth the explosion and finally, on top, the DETASHEET. Each blast would instantly crumble the mold and rocket the twisted metal sheet hundreds of feet into the air.

*After 80 blasts, she got it right*

One day Rosenberg brought a mold that was too large for the anvil. Impulsively, she laid it on the gravelly surface of the desert. This time, to everyone's astonishment, the blast forced the metal into the mold and left it imprinted with the mold's image in bas-relief. "The explosion's shock waves had been striking the metal anvil and then reflecting back, destroying the mold too quickly," says Rosenberg. "But the ground absorbed the shock and enabled the impression to be made. It took us 80 blasts to start getting it right."

Today she is going to try to get it right again. On a nearby peak, a red flag rises, signaling nontechnicians to clear the blasting area. Rosenberg ushers some fine-arts students from the institute into her van and roars up the steep dirt track to another hilltop. There they file into a thick-walled yellow bunker to view the explosion safely through a mirror system. Far below, tiny technicians in yellow hard hats run Primacord, a detonating cord resembling red rope, from the artist's pyres to their own bunker, where, at a signal, they will set off electric blasting caps. A siren blows. The countdown begins. "Five . . . four . . . three . . ."

At zero, the desert below erupts, exhaling a huge, expanding ball of flame. A terrific thud shakes the bunker. Now smoke hangs over the valley, small flames licking the ruins of Rosenberg's four altars. She shepherds the students back into the van and races down the mountain to see what the blast has wrought.

Reaching into the mold's rubble, she extracts a brass plate, bent at the corners, and points to several glowing spots where she had placed bits of aluminum and copper foil so that the explosion would fuse them into the brass. "These look a little bright, but we'll see what happens when we work on them with the patinas," Rosenberg comments.

Later, at her studio, she dons a lab smock, covers her hair with a gaudy bonnet and pulls on a tricolor in-



Susan Contreras



*Forest Floor* looks almost alive when Rosenberg has finished highlighting colors and accentuating textures.

dustrial filter mask. She covers her eyes with welder's goggles. Finally, putting on yellow neoprene gloves to protect her hands from the acids, she is ready to work. "Once a deliveryman came back here while I was doing this and I thought he was going to have a coronary," she says. "I look like a space monster."

Cleaning away the soot with acetone and a wire brush mounted on an electric drill, Rosenberg reveals a dully shining complex of fossils, fern fronds, grasses. Next, she brushes the brass with chemicals bearing such names as Liver of Sulfur and Aluminum Black. These are her patinas. Reacting with the metal, they create patches of black, gold, tarnished silver and gun-metal gray. With sandpaper, Rosenberg shines raised portions, like stems and leaves. "This is fun, because you start seeing things you didn't know were there," she says, her voice muffled by the mask.

Now she attacks the brass with a blowtorch and a household plant sprayer full of copper nitrate, creating reds, blues, greens, purples. With an implement resembling a dentist's drill, she grinds away patinas to bring out fine details, like the veins of a leaf. Her final application is a clear protective coating. "What I really worry about," she says, taking off her mask and goggles to peer at the piece upon which she has been working, "is that I'm creating my own Love Canal right here in the backyard."

Whatever else Rosenberg may be creating, she produces striking art. Her etchings are imaginative excursions on the border between realism and dreams, but her detonographs are even more unusual, full of texture and complexity. Last fall, New Mexico's new, ultramodern Museum of Natural History in Albu-

querque unveiled her *Evolutionary Geoscape II*, a large mural installed permanently over the front entrance. It is a stunning demonstration of the artistic possibilities in explosions, an evocation of the past fossilized beneath the Southwestern desert. Bones, beasts, plants, dirt and stone overlay the brass and copper plates, an evolutionary maze where butterflies and bees flutter, spanning the eons from the Paleozoic to now, while trilobites fade into fish and the metal crawls with creatures past and present—prehistoric reptiles and modern lizards, archaeopteryxes and eagles, saber-toothed tigers and prairie dogs, and human bones, buried with pottery. She has signed the mural with her own handprint. "That is how primitive artists did it," she says. Crossing the panels from left to right are naked footprints, the artist's own, as if time were moving ahead, or as if the creator were traversing her own creation.

Explosions are what make this kind of complex metal artwork possible; it could be done no other way. "Metal is hard to work," Rosenberg says. "It's heavy, it's dirty, it cuts you and you need a sledgehammer to make it do what you want. But I like the way it looks when it's finished. It has scale. It has presence. It's a real object."

Not surprisingly, Rosenberg's powerful "objects" are finding an appreciative audience. One detonograph, inspired by ancient New Mexico petroglyphs, is hanging in the Albuquerque office of an executive with the Public Service Company of New Mexico. Another, her first major commission, appropriately enlivens the lobby of the New Mexico Institute of Mining and Technology's fine arts and convention center. The artist is currently working on a large, freestanding metal sculpture for a research firm. A series of obelisks and columns, it is encrusted with microchips, printed circuits, human neurological pathways, ancient rock paintings and chemical formulas—"the secret language of science," she says.

Now another day's blasting work is done. Things have gone well and Rosenberg is pleased. She and a visitor relax for a few moments, gazing out over her beloved desert and talking about her art. "We used to have a huge dog that would obey only me," she says. "Creating art from explosions is a little like handling that ferocious dog. It's a dangerous thing that, to some extent, I can control." From behind her comes the dull thud of a detonation. "Explosions are frightening," she reflects, "but I like the *idea* of them. Genesis, the big bang—creation from destruction!"

Artist puts final touches on detonograph featuring life mask, her hands a counterpoint to hands in metal.