

ROBERT MALLARY
COMPUTING ART



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Bob's sketch of Elaine de Kooning (1951)

A Short History of QUAD

by Mason Whitehorn Powell



Robert Mallary (1917–1997) was among the first artists to make the transition from the material sciences to computer sciences. He rose to national prominence during the early 1960s in the New York art scene as a “Neo-Dada” trash artist. During this period his work was frequently exhibited in group shows with abstract expressionist sculptors, such as in “Sixteen Amerians” at the Museum of Modern Art and the Whitney Museum of American Art annuals. At the height of his fame he exhibited his sculpture “Cliffhangers” at the 1964 New York World’s Fair, and was a recipient of Rockefeller, Guggenheim, and Fulbright grants.

Among his closest friends, collectors, and associates were Elaine and Willem de Kooning, Richard Diebenkorn, Wayne Thiebaud, Philip Johnson, Governor Nelson Rockefeller, and his art dealer Allan Stone. Ultimately his experimentation with plastic resins would severely poison him. Though lasting health consequences forced Mallary to put New York City and the prominence he had gained behind him, it allowed him to realize new creative horizons.

A lifelong academic, in 1967 Mallary became a professor in the art department at the University of Massachusetts at Amherst. With access to an IBM 1130 in the university computer lab, he understood then that computers would unlock the future of artistic potential. He shared this

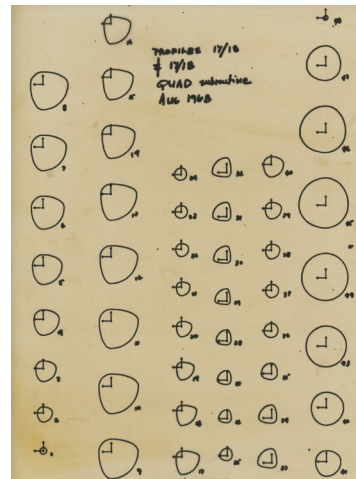
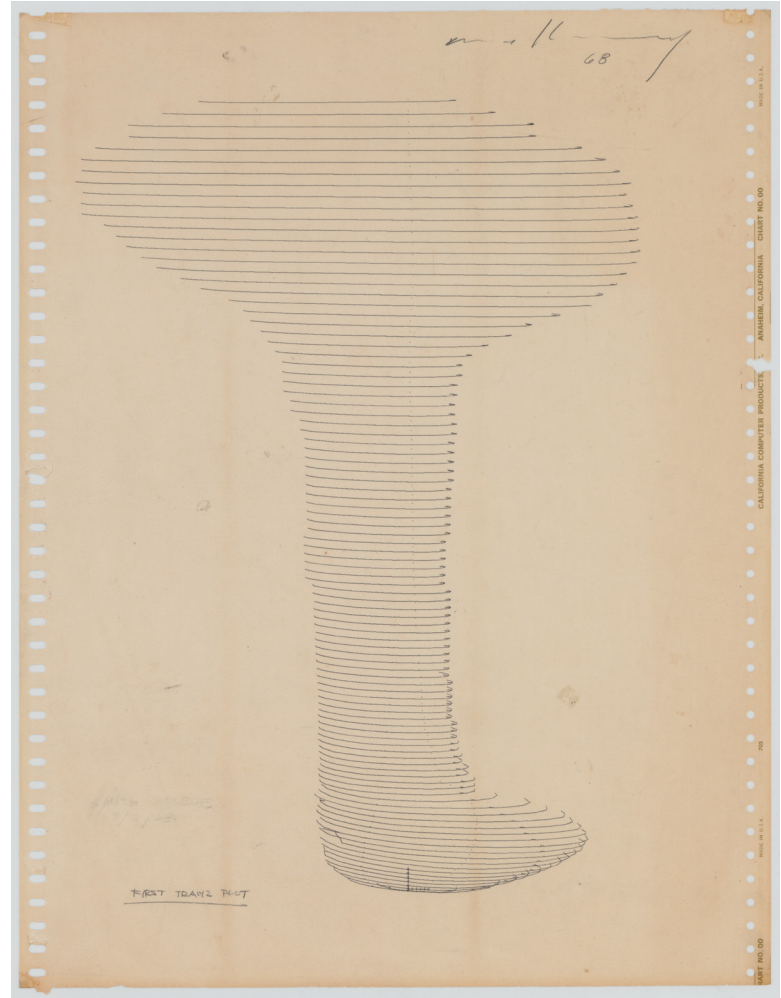
concept with his son Michael Mallary, an engineer, physicist, and MIT graduate, and together they wrote a program that generated the first computer designed sculpture.

"The computer is portentous, because for the first time the sculptor has access to a tool which can be used not only for executing a work of art, but conceiving one as well. It has already been demonstrated that the computer can assist the sculptor to some degree; in the future it may, in effect, come to collaborate with him."

—Robert Mallary, *Artforum*, May 1969

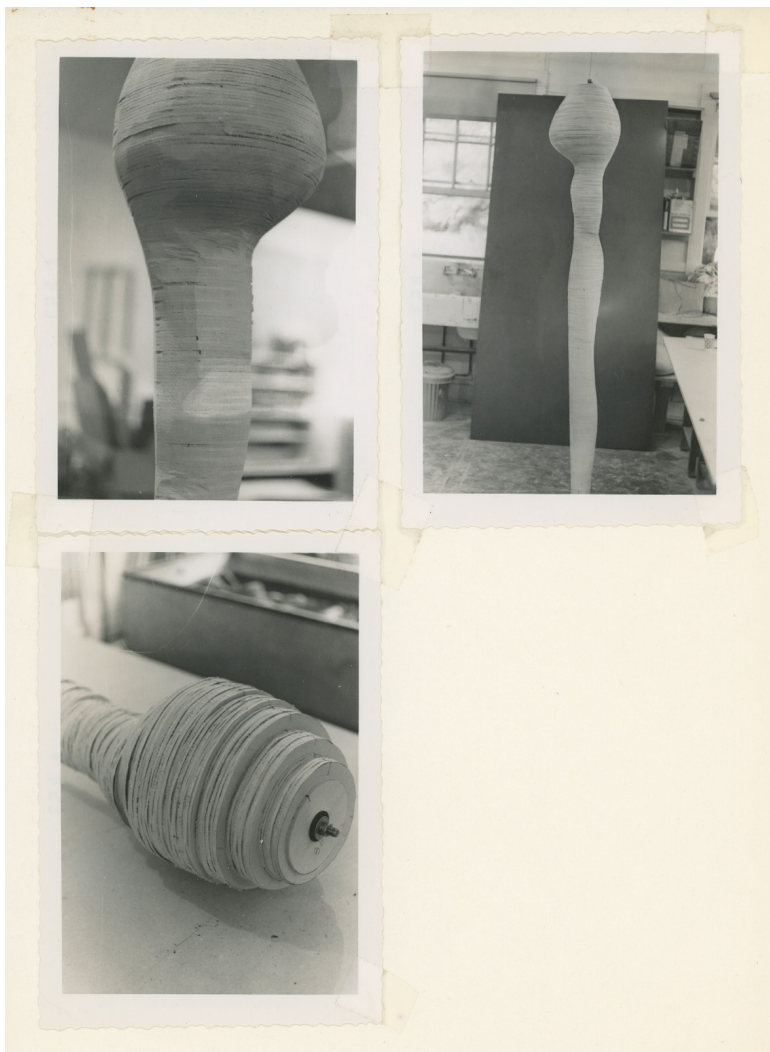
Together, Robert and Michael Mallary developed a Fortran computer program named TRAN2. From two contour profiles drawn by the artist, consisting of the X and Y coordinates, four points on ellipses were read off graph paper and then transferred onto punch cards. The cards were read by the IBM 1130 and plotter print outs on the IBM 1627 revealed the layers of the sculpture to be constructed. According to Michael Mallary: "After reading the data cards, TRAN2 calculated hundreds of connected contour points (i.e. points on the slice perimeter) for each horizontal slice."

What the program had calculated were the layers of the sculpture and "the plot for each layer was then glued to a sheet of plastic or wood and the slice perimeter was manually cut with a band saw. All of the slices were then stacked and bonded together." The layers were then sanded and finished. Atop a wooden base, the resulting QUAD sculptures hint at a classical influence and the human form, while retaining a distinctive modern approach. Mallary had arrived at an early form of additive 3D printing.



First TRAN2 Plot (1968)

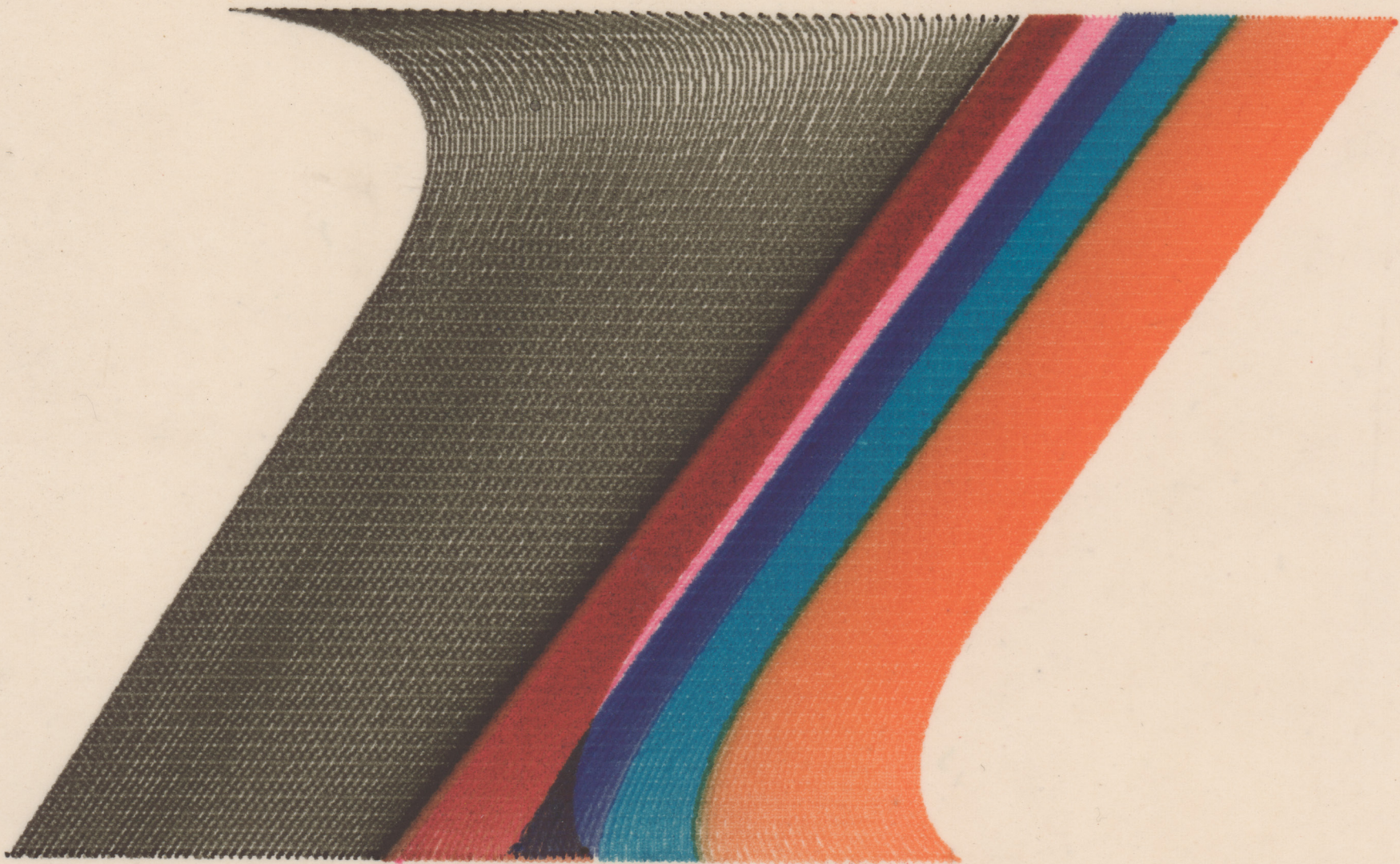
QUAD Profile Printouts (1968)



Archival photos of QUAD (1968)

Overleaf: Plotter drawings (1972)

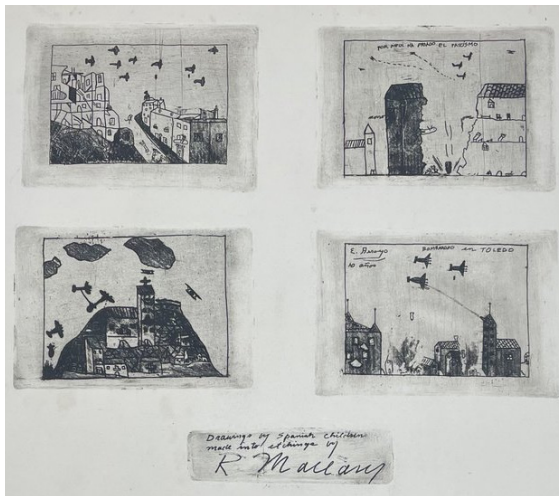




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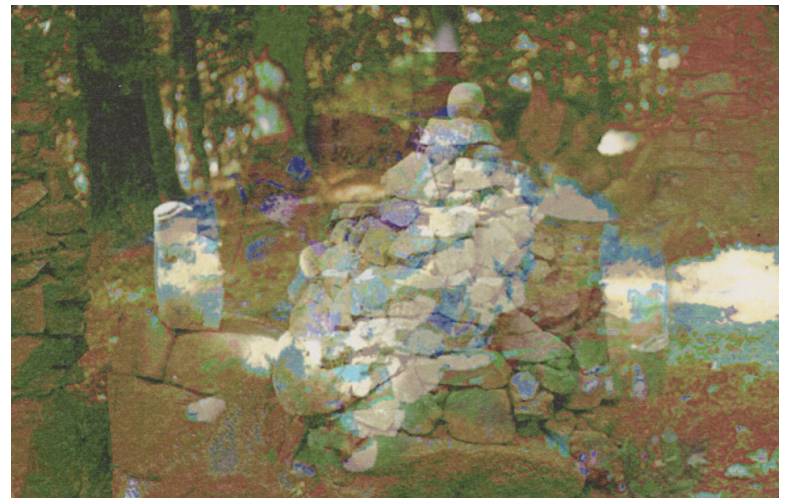
Etchings based on children's first-hand accounts of the Spanish Civil War (1938)

Opposite:
Photoshop glitch manipulation of a rock carin (1980s)



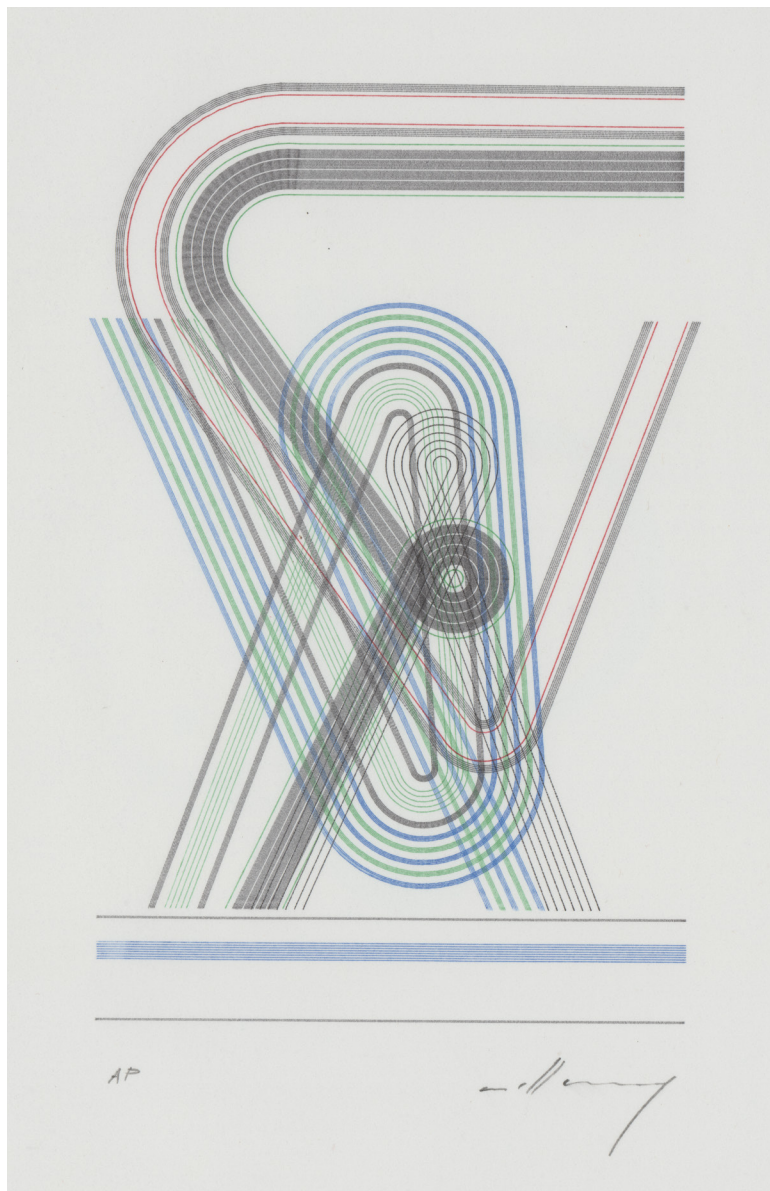
Mallery was deliberate in his work. More than experiments, the early results of his collaborations with machines were QUAD I (1968), QUAD II (1968), QUAD III (1969). QUAD I was exhibited at the Institute for Contemporary Arts in London at the landmark show *Cybernetic Serendipity* in 1968. With a focus on computer-generated artworks, this event would cement Mallery's place among the trailblazing artists integrating new technologies into their practice.

Still, it would be decades before the computer was widely considered a serious artistic tool. QUAD I and II remained in the possession of Mallery for the remainder of his lifetime, and QUAD III was exhibited by the Whitney Museum in 1968 and sold to the Tate Modern in London by the Mayor Gallery in 2009. Mallery wrote about QUAD IV in *Artist and Computer* in 1976. Composed of laminated marble, the final QUAD is sadly lost.



Upon realizing “an element of perfection” with the QUAD series, Mallery soon turned his attention to creating plotter drawings. Using an IBM pen plotter printer, inputs from punch cards would generate machine-drawn outputs. Mallery wrote several different programs to execute these drawings. Sometimes the results were expected, but he would also provide enough code to start a drawing that allowed the program to finish the piece on its own. In this way he foresaw the rise of AI and VR/AR technologies becoming more prevalent in art practices today.

His influence is perhaps most felt through his Computer Graphics Workshop taught at UMass Amherst from the late 1960s onward. By the end of his teaching career at Amherst in 1997 he was a Professor of Graphics Programming and Computer Art. Mallery once again turned towards assemblage and found art, utilizing Photoshop to manipulate images akin to glitch art.



Plotter from Ribbon Series,
Artist Proof (1981)

Upon Robert Mallary's death his family cared for his estate and archive, which retained paintings and drawings from childhood onward, engravings and sketches from his studies at the Escuela de Las Artes Del Libro (1938–39) and Academia San Carlos (1942–43) in Mexico City, made with the collective Taller de Gráfica Popular, various trash art and assemblage sculptures, Cliffhangers, thousands of computer drawings, code, notes and manuscripts, and at the centerpiece of the collection, QUAD II.

In 2021, under the guidance of the gallerist Mitchell Algu, a group of collectors purchased the entire collection directly from the Mallary family. The artworks had been preserved for years in Mallary's studio in Conway, Massachusetts, survived relocation to a barn, and then storage in a pair of shipping containers. Upon purchase, the intact body of work was moved to a climate controlled warehouse in Texas where it is currently being cataloged, preserved, and digitized. Mallary Projects aims to shed new light on this work through exhibitions, films, and engagement with artists and the academic community online and off.

This collection of computer-generated artworks represents the origins of digital composition and contemporary cybernetics. The hope is that this project will introduce Mallary to a new generation of artists and technologists.

MARY

