Technology, A Poetic Source:  
The Work of Steina and Woody Vasulka

As artists and technological innovators, Steina and Woody Vasulka have been primary figures in the development of independent video since the late 1960s. With backgrounds in film and music, the Vasulkas approached the new video medium with a desire to examine what made it different from other artistic media and with an interest in both the materiality of the electronic image and the workings of electronic machines. In keeping with the museum's concern with the technology of moving images, the Vasulkas' work deals with both the final image on the screen as well as the complex structure that produces that image. This work has consistently stood at the forefront of innovations in electronic imaging, and can be seen as having developed parallel to developments in the technology of commercial television—evolving from black and white to color, from analog to digital imagery, from the simple video camera to a complex interface of video and computer technology. However, there are important distinctions between the Vasulkas' conceptions of electronic technology and those of the television industry. Throughout the years, the Vasulkas have worked with engineers to design imaging machines that can manipulate video images in ways that commercial machines are not designed to do. For the Vasulkas, the electronic image itself is always central to their subject matter.

Steina and Woody Vasulka began their exploration of the possibilities of the video medium in New York in 1969. Born in Brno, Czechoslovakia, Woody was initially a filmmaker. Steina,
and the Digital Image Articulator (Imager). He used the scan processor to reduce certain images to skeleton forms of waveform lines, and the Imager to construct three-dimensional forms into which he then inserted film images. This results in three-dimensional image objects constructed of archival film and photographic images that appear to sit on top of video images of the Southwest. The three channels of imagery in this work are seen across a complex design of monitors of varying sizes in a form that is intended to create a complex panorama for the viewer.

In *Art of Memory*, Woody manipulates and reconstructs archival images from the Russian Revolution, the Spanish Civil War, World War II, and the atomic bomb to meditate on these historical events and how we perceive them in retrospect. This work is concerned with memory, both personal and collective, and the media through which history and memory are now defined—photography and cinema.

All works are collection of the artist.

Text by Marita Sturken, curator.
While most industrial keyers allow one image to be laid into another, the Vasulkas and engineer George Brown designed a keyer that could overlay up to six images. In 1974, the Vasulkas acquired a Rutt/Etra scan processor, designed by artist/engineers Steve Rutt and Bill Etra, a device that allows the video raster (the lines that form the video image) to be manipulated and reduced to a kind of skeletal frame, producing a kind of topographical effect. During the late 1970s, the Vasulkas worked with engineer Jeffrey Schier to design and build the Digital Image Articulator (Imager), a digital imaging device that can perform processing in real time. At the time that the Imager was built, most commercial digital devices were not only prohibitively expensive but took many hours to produce the final digitized image. The Imager transforms video images into digital images almost instantly; once these images are digitized, they can be modified and manipulated in many different ways—reduced or expanded, multiplied, rotated, etc. This move from analog electronics (in which changes in the signal that produces the image or sound is regulated through amplification or reduction—a kind of knob twisting) to digital electronics (in which the image is divided into pixels, or picture elements, each one of which is assigned a number and controlled mathematically by a computer) was very important in the development of the Vasulkas' work. Because imaging technologies are always integral to their subject matter, they perceive their work as a "dialogue" with these machines.
This exhibition consists of video installations, single-channel videotapes, and electronically generated photographs, all of which were produced from 1969 to 1989. These works overlap both technologically and thematically. The installation works are designed to define a particular space for the viewer. They are both multimonitor works (in which the video image is seen on multiple screens) as well as multichannel works (in which two or more tapes are shown in synchronization to create an interaction between sets of moving images). Many of the single-channel videotapes (for which there are more detailed program notes) are concerned with similar themes—the relationship between the human eye and the camera, the interaction of sound and image, experimental narrative forms, landscape, and spatial relationships—as the four installation works. Woody's electronically-generated photographs are taken from the video screen, and present a study of the ways in which the Vasulkas' imaging machines can manipulate and transform the camera image.

A walk through the work in this exhibition provides a journey not only through the historical development of the Vasulkas' work but also through the different technological capabilities of their imaging machines.

**Allvision**
2 closed-circuit video cameras, a rotating device with mirrored sphere, 8 monitors, color, silent.

**Allvision** (in lobby) is a central work in Steina's Machine Vision series, a group of videotapes and installations concerned with
finding a camera view that moves beyond the restrictions of the human eye. Steina says,

Habitually, by looking, we keep selecting, subjectively 'zooming' and 'framing' the space around us. I wanted to create a vision that can see the whole space all the time....It was a challenge to me to create a space that would not deal with the idiosyncracies of human vision.

In Allvision, two live, rotating video cameras face a mirrored sphere. These closed-circuit cameras are set up like surveillance cameras--they are programmed to rotate by themselves, and they do not generate an image onto a videotape, rather they continuously produce an image that appears on the video monitors. Allvision is a participatory work that is activated by the viewer's presence. Through this Machine Vision device, Steina reorients the viewers within the gallery space, as they see themselves in that space on the monitor screens. Thus, Allvision mediates the viewer's position in space through the machine.

Matrix
1970-72, by Steina and Woody Vasulka
2 matrixes. 12 monitors, 1 channel each, b&w, sound.

Matrix is one of the Vasulkas' earliest experiments with multimonitor installations. The work consists of two individual matrixes that operate on the same principle, each of which consists of a single-channel of video that is shown across 12 screens. At the time that the Vasulkas designed this work, artists were just beginning to experiment with the imaging potential of using multiple video monitors (in works that could be seen as antecedents to the video walls so common today in
clubs and industrial displays). Not only did this approach increase the theatrical potential of a work, but it also allowed for experimentation with the kinetics of a single video image. Seen on multiple monitors, the image appears to skid and roll across the screens. Some of the abstract images in Matrix are derived from a video camera and others are generated from the electronic signal alone. They are explorations of the interface of sound and image (in video technology, sound and image are both derived from electronic waveforms, whereas in cinema, image and sound are derived from separate technologies) in which either the sound and image are generated simultaneously, or the sound results from the electronic image. Like many of the Vasulkas' early works, Matrix is primarily about the electronic image itself, and the properties that distinguish it from other media.

The West
1983, by Steina. 4-channel audio by Woody Vasulka.
22 monitors, 2 channels, color, sound. 30 minute cycle.
Produced by the Program in the Arts of the State University of New York for SUNY/The Arts for Television with funds from the Rockefeller Foundation and the National Endowment for the Arts.

The West is a two-channel, multimonitor installation that is concerned with the human imprint on the desert landscape of the American Southwest. While Steina has always worked with landscape, The West represents a culmination of her concerns of both landscape and Machine Vision. Steina says,

I moved [to New Mexico] because I wanted to experience what it is to live in beauty. I did not think that it was going to affect my images as much as it did. I had always had large interiors in which to work, and suddenly we were restricted to a small house. I just went outside one morning and said, "Well, my studio doesn't have any walls
and the ceiling is very high and it's blue." I just adopted to whole Southwest as my studio.

To make **The West**, Steina set up rotating cameras (sometimes with her characteristic mirrored sphere) in New Mexico's Chaco Canyon, in the desert near the Very Large Array (VLA) radio telescopes, and walked with her camera through Indian ruins. She then colorized some of this imagery to give it saturated hues, and edited it into two separate channels designed to be seen simultaneously on alternating video monitors. In **The West**, Steina employs horizontal drift, a technique discovered accidently by the Vasulkas in the early 1970s, in which the video image is made to move horizontally across the screen (here, this effect gives the impression that the image is travelling from one screen--or channel--to the next). Seen through this complex electronic system, the Southwestern landscape in **The West** symbolizes the spectrum of human technologies from the ruins of the ancient Anasazi Indians to the radio disks scanning the sky.

**Art of Memory**
24 monitors, 3 channels, color, sound. 3-channel audio. Produced with funds from the National Endowment for the Arts, Western State Arts Division, and New Mexico Arts Division.

**Art of Memory** is a three-channel multimonitor work concerned with the violent events that have defined the twentieth century and ushered in the atomic age. This complex work combines Woody's interest in narrative and history with his ongoing experimentation with new imaging technologies. To produce **Art of Memory**, Woody worked primarily with the Rutt/Etra scan processor
who was born in Reykavik, Iceland, was a classical violinist who had played in the Icelandic Symphony Orchestra. Their diverse backgrounds have influenced the ways in which the Vasulkas have produced work in collaboration and as individuals. While Woody has been primarily concerned with the distinctions between the cinematic and video image, especially in relationship to the cultural notion that cinema is a "window on the world" and a representation of reality, Woody has pursued this concern not only by producing images without using a camera (that is, produced purely by the electronic signal in the machine), but also by systematically exploring the kinds of manipulation that are possible in video. Steina, on the other hand, has been concerned with constructing complex imaging machines that imitate basic camera movements such as pan, tilt, and zoom, and in exploring the ways in which video can record and transform landscape. The Vasulkas worked in collaboration until 1974; since that time they have mostly produced work individually, although they continue to provide collaborative assistance on each other's work. They live in Santa Fe, New Mexico.

Several imaging devices have been central to the Vasulkas' work. While machines that perform somewhat similar functions were often used in the industry, the Vasulkas were interested in working with tools that were "open-ended boxes," i.e. not built with the limitations of most industrial machines. For instance, one of their first machines was a multi-keyer. A keyer is a device that allows one image to be electronically inserted into the darker areas.