New dimension

Holography offers enormous possibilities to future artists

Harold Haydon

"I'm sure that once the artists start to explore holography, the possibilities are enormous," says Loran Billings, director of Gallery 1134, 1134 W. Washington. Through her efforts, interest and personal involvement in holography, the gallery has Chicago's first international holographic exhibit and the largest seen here, but only through next Sunday because of its great expense.

The hologram is a three-dimensional image that can be seen but not touched. No matter how convincing to the eye, there is really nothing there but an interference pattern of light recorded on film. Properly lit, the film can reconstitute the image in space, with motion, too.

CENTRAL TO HOLOGRAPHY is the coherent light beam produced by a laser, the acronym for light amplification by stimulated emission of radiation. Lasers have literally changed the world since the first operative laser was produced by Theodore H. Maiman at Hughes Aircraft in California in 1960.

From delicate surgery to beams purported to be capable of total destruction of missiles, lasers capture the imagination in the most practical ways. Press a button, and Hamlet's ghost will walk and talk amid the living actors and yet be an image in thin air. The same play can be performed in a hundred places simultaneously by the holographic images of the all-star cast onstage. Space fantasies are scheduled to be realized.

An excellent set of diagrams and models explains holography in its several forms as an introduction to the show, but one does not have to know the scientific facts to enjoy the exhibition.

IN A PICTURE FRAME, which is more like a window than a picture on the wall, the warm red image of Dr. Denis Gabor seems about to speak. Gabor, a research engineer at the Rugby Electric Co. in Scotland, conceived the theory behind holography and made the first hologram in 1948. He used a filtered mercury arc lamp in pre-laser days.

More spectacular, perhaps, but not so real in effect, is Tung H. Jeong's full-size seated skeleton. From the U.S.S.R. come holograms that seem to project into the room. Stephen Benton's "Engine No. 9" does the same. "Do not touch" signs are needed to protect the filmed image.

While realistic images predominate, several artists have made abstract holograms, and, of course, the computer has joined the act. Britin Zabka shows "The First 360 Degree Cell Animation" and another movie called "The Knight Shot."

Zabke belongs to the Multiplex Co-op of San Francisco, working with physicist Lloyd Cross. Their goal is to generate holograms using sunlight. Just as white-light holography made it possible to reconstitute images with any point source, even a candle, instead of with an expensive laser, so sunlight holography should make the art accessible to everyone. Lasers are very expensive—$8,000, $16,000, $35,000, depending on size.

THESE ARE THE pioneers, some whose names are history, some with Nobel Prizes. New York now has the nation's first Museum of Holography. The first holographic art exhibit was organized in 1970 at Cranbrook Academy. We are already into the "But is it art?" phase of acceptance of a new visual medium.

Holography is what it is and will become. It is no threat to painting, and no threat to conventional photography, although it does something more complicated with photographic emulsion. One of the distinctions of holograms is that any small part of the film, as small as a pinpoint, can generate the whole image. "It is like the cells of the body," Ms. Billings says. "Minute parts contain the information to regenerate the whole."

Unfortunately, a photograph of a hologram takes revenge by reducing the image to two dimensions. Holograms exist in deep space, can be in the round and can present motion.

Holography has its enthusiasts and missionaries. Zabka is one. In Chicago to promote interest in holography at several schools, he says: "I want everyone to be able to do it. It's such a joy, the closest thing to the nature of mind itself." Interested and active in holography since the age of 5, Zabka appreciates freedom of expression and experiment. "I'm very honored to be an American holographer," he says.

"Time and Space" is a hologram by Tung H. Jeong at Gallery 1134.

LORAN BILLINGS is Chicago's holograph enthusiast. Joining forces with Jeong, one of the world's great holographers and a Lake Forest College physics professor, Gallery 1134 will open a school for holography in autumn, with Jeong as consultant. Introductory and advanced holography will be taught. Jeong developed the 360-degree cylindrical hologram in 1966, and the first computer-generated movie with Hal Snyder in 1973.

It will not be easy. Even the film must be imported from Belgium. None is made here. For Gallery 1134's pioneering show, the Illinois Arts Council provided $250. The National Endowment for the Arts "has no guidelines for holography" and gave nothing.

Meanwhile, the Russians are ahead in some ways, notably in holographic motion pictures for a mass audience, revealed in 1976. A strip of the film is in the exhibition. Holographic feature-length films are ahead.