

Lloyd G. Cross  
Editions Inc.

Lloyd G. Cross is a recognized expert in the development and application of laser devices. He is also a scientist who is deeply interested in the role of art in our society and in furthering that merging of art and technology that will produce meaningful new art forms. In 1966, Mr. Cross entered into partnership with Mrs. Margaret Bennett and started The Print Shop, a graphic arts gallery, which later became Editions Inc. From September of 1968 to October of 1969, Mr. Cross, as President and Chairman of the Board of Sonovision Inc., has directed the development of that company whose pioneering use of the laser as an art medium and entertainment device is beginning to draw national attention.

Mr. Cross has participated in several artistic events and experimental performances in addition to operating the Editions Gallery. A partial list of these events is given below:

Maltese Cross Movement - A. K. Dewdney, L. G. Cross, and others performed two evenings of lasers, optics, projections, and music at The Canterbury House, Ann Arbor, Michigan, November 1967.

Everybody Wins - R. Sheff, L. G. Cross, and others performed two evenings of electronic music at The Canterbury House, Ann Arbor, Michigan. American Flag Laser Piece. January 1968.

Concert of Visualized Music - L. G. Cross, L. Wyman, R. Lowe, and others presented krypton laser projections with taped and live music at the Michael C. Rockefeller Center for the Performing Arts, Fredonia, New York. May 1969. Three performances.

Holograms - L. G. Cross, A. Z. Lite, G. T. B. Pethick and others. An exhibition of twenty-seven holograms at The Cranbrook Academy of Art, Bloomfield Hills, Michigan, November 17th to January 18th, 1970. One of the first major exhibitions of art holograms.

Mr. Cross was born in Flint, Michigan, in 1934 and received his education in the Flint Public Schools. He attended Flint Junior College and the University of Michigan at Ann Arbor, receiving his Bachelor of Science degree in Physics in 1956. He has since completed all necessary course work for the Ph.D. degree in Physics at the University of Michigan.

From 1956 to 1961 Mr. Cross was a member of the staff of the Institute of Science and Technology at the University of Michigan, where he engaged in basic semi-conductor measurements and developed various infrared detectors. In 1958 he joined the Solid State Physics Group where he assisted in the basic research of ruby as a maser material, paramagnetic resonance measurements, dielectric constant measurements, studied zero and low-magnetic field resonance spectrum and developed a process for silvering ruby maser cavities. He conducted investigations on ENDOR effects in ruby, microwave circuit analysis and design including a high performance cavity, maser antenna feed horn design and low-noise microwave circuitry. In 1959 he assumed co-responsibility for the design, development and initial operation of a ruby maser radiometer for the University of Michigan's eighty-five foot radio telescope on Peach Mountain. The maser radiometer became operational in January of 1960 and was used to make several new observations, including the first radio detection and temperature measurement of the planet Saturn.

In 1961 Mr. Cross formed Trion Instruments, Inc., which became the first company to manufacture commercial ruby laser systems. The company was sold to Lear Siegler Inc. in 1962.

From 1962 to 1967 Mr. Cross was Manager of the Laser Systems Center for Lear Siegler Inc. He was directly involved in the conception and development of one of the first applied laser systems, the laser microprobe. Lear Siegler Inc. was awarded the Industrial Research Magazine's IR 100 Award for the laser microprobe as one of the most significant new products of 1963. Under Mr. Cross' direction the thirty-man engineering group of the Laser Systems Center was responsible for the development of many new laser components and devices, including the invention and development of the first reusable saturable filters for use in high power laser systems, the development and manufacture of the first uncoated laser cavity reflectors, design and operation of scanning optical radar systems, packaged under-water laser systems and recent significant innovations in high power CO<sub>2</sub> laser devices.

From May 1967 to July 1968 Mr. Cross was employed as a senior member of the staff and Director of Laser Development at KMS Industries, Ann Arbor. During this period he developed a coherent pulsed ruby laser having a coherence length of over six meters. He also participated in the development of a pulsed hologram camera system using the coherent pulsed laser. In addition, during this period, Mr. Cross' interest in the artistic applications of technology became apparent in the work he did on a three-dimensional enhancement technique and the development of a sound display device for the visual presentation of music.

Mr. Cross is a member of the Optical Society of America. He has authored or co-authored approximately ten technical papers and has five patents pending and one patent issued in the laser field.