22. On Tropel and The Institute of Optics

*John Bruning and Douglas Goodman*

The influence of The Institute of Optics on Corning-Tropel Corp. can be summarized simply: Without the Institute, Tropel would not exist.

During World War II, the Institute worked for the Department of Defense on image-stabilized binoculars. Some years later, interest in this project grew, but the Institute no longer wanted to participate. In 1953, Robert Hopkins proposed to Jim Anderson and Jack Evans that the three of them start a company to do this work. Thus Tropel was born. The name was first ROPEL—Rochester Optics and Electronics—but this was found lacking, and a T was added.

The first full-time Tropel employee was John Buzawa, also of The Institute of Optics. Buzawa was so valuable to the company that the three founders made him a fourth partner, and he eventually became the president.

Prior to joining Tropel, Jack Evans ’39, ’49 (MAs) taught at the Institute for fifteen years. Later, Evans left to found Velmex, a company that specializes in precision mechanical motions and slides. Anderson left Tropel in 1989 to start Optics Technology, specializing in small precision lenses and mechanical parts.
In the years that followed, the Institute provided most of Tropel’s optical designers and engineers, mostly masters or bachelors graduates. Some of these employees did stints at other optical companies before working at Tropel. Hopkins, connected to both the Institute and Tropel, was among the first to exploit the computer as a tool for handling problems in lens and optical-system design.

During the 1960s and 1970s, Tropel became involved in the design and fabrication of optics used in the microelectronics industry. Hopkins, in his zeal to improve the performance of lenses used for microcircuit fabrication, realized that better optics required better glass and more precisely fabricated lens elements; thus he placed a great emphasis on measurement technology and laser interferometry in particular. From this period forward, Tropel became a leader in precision optics for the semiconductor industry and a leader in metrology instrumentation.

Hopkins was officially associated with Tropel until 1972, when the company was purchased by Coherent, which moved the medical operation to Palo Alto, Calif. in 1975.

Charles Munnerlyn, one of Hopkins’s many Ph.D. students, stayed in the Rochester area after graduation to head research and development for Tropel in the early 1970s. Munnerlyn worked on laser metrology and also led an effort to develop the first automated digital device to measure refractive errors in the eye. Called the Dioptron, the instrument directs a light source into the eye of a patient as he peers through an eyepiece. Light from the pattern reflected by the retina produces an analog signal, which is converted to a digital signal and fed into a computer. The computer in turn fits a sine wave to the selected signal, then calculates the refractive error of the eye from the sine wave signal. The Dioptron was one of the first devices to incorporate an Intel microprocessor.

A significant gift from Munnerlyn is kicking off the biggest expansion of the Institute’s facilities since it was created seventy-five years ago. Playing to the University of Rochester’s strengths, a new one hundred thousand-square-foot building will house scientists studying both optics and biomedical engineering, with plenty of overlap in

Some recent connections between Tropel and the Institute, Bryan Stone, Greg Forbes, John Bruning, and Duncan Moore.
areas such as optical medical diagnosis and Munnerlyn’s own specialty, laser vision correction.

The synergy between the Institute and Tropel continues: Tropel is always in need of the best students trained at The Institute of Optics, and Tropel employees give back through the teaching of core courses with industry relevance. Tropel currently employs twenty-five University of Rochester graduates.