The Birth of the Laser Industry: Overview

Jeff Hecht

Companies large and small began making lasers after Ted Maiman announced the ruby laser. The big companies had large industrial research laboratories and the resources needed to develop a new technology. The little companies, many formed after Maiman's report, had energy, enthusiasm, and flexibility. Both would play important roles in the laser industry.

Money, expertise, and military contracts gave some companies a head start. Hughes Aircraft started with Maiman's design, as well as an Air Force contract to develop laser radars and rangefinders. The much smaller Technical Research Group already had an ARPA contract to develop lasers based on Gordon Gould's patent applications and were the first outside group to replicate Maiman's laser. Bell Labs had a formidable laser research group. Other big companies including American Optical, IBM, General Electric, Raytheon, Varian, and Westinghouse began investigating lasers, with their own funds or with military contracts.

American Optical, Hughes, and Raytheon became important early laser manufacturers, but most other big companies never made many lasers. As part of the AT&T regulated phone monopoly, Bell Labs had to license its patents. GE, IBM, Varian, and Westinghouse focused on other products.

A wave of small companies also set out to build lasers. Maiman left Hughes to found a laser group at a short-lived company called Quantatron in Santa Monica. When Quantatron's backers soured on lasers, Maiman founded Korad Inc. with investment from Union Carbide and key people from Hughes and Quantatron. Lowell Cross, Lee Cross (no relation), and Doug Linn left the University of Michigan's Willow Run Laboratory in 1961 to establish Trion Instruments Inc. in Ann Arbor to build ruby lasers they had developed while at Michigan. Narinder Kapany added lasers to the product line of Optics Technology, which he founded in 1960 to make optical fibers and other optical equipment.

Several books and articles, listed below, tell about the early days of laser development. In the essays that follow, two industry veterans recount their adventures as young men working in the very young laser industry in the early 1960s.

Bibliography

1. J. L. Bromberg, *The Laser in America 1950–1970* (MIT Press, 1991).
2. J. Hecht, "Lasers and the glory days of industrial research," Opt. Photon. News **31**, 20–27 (2010).
3. T. Maiman, *The Laser Odyssey* (Laser Press, 2000).
4. R. Waters, *Maiman's Invention of the Laser: How Science Fiction Became Reality* (CreateSpace Independent Publishing Platform, 2013).