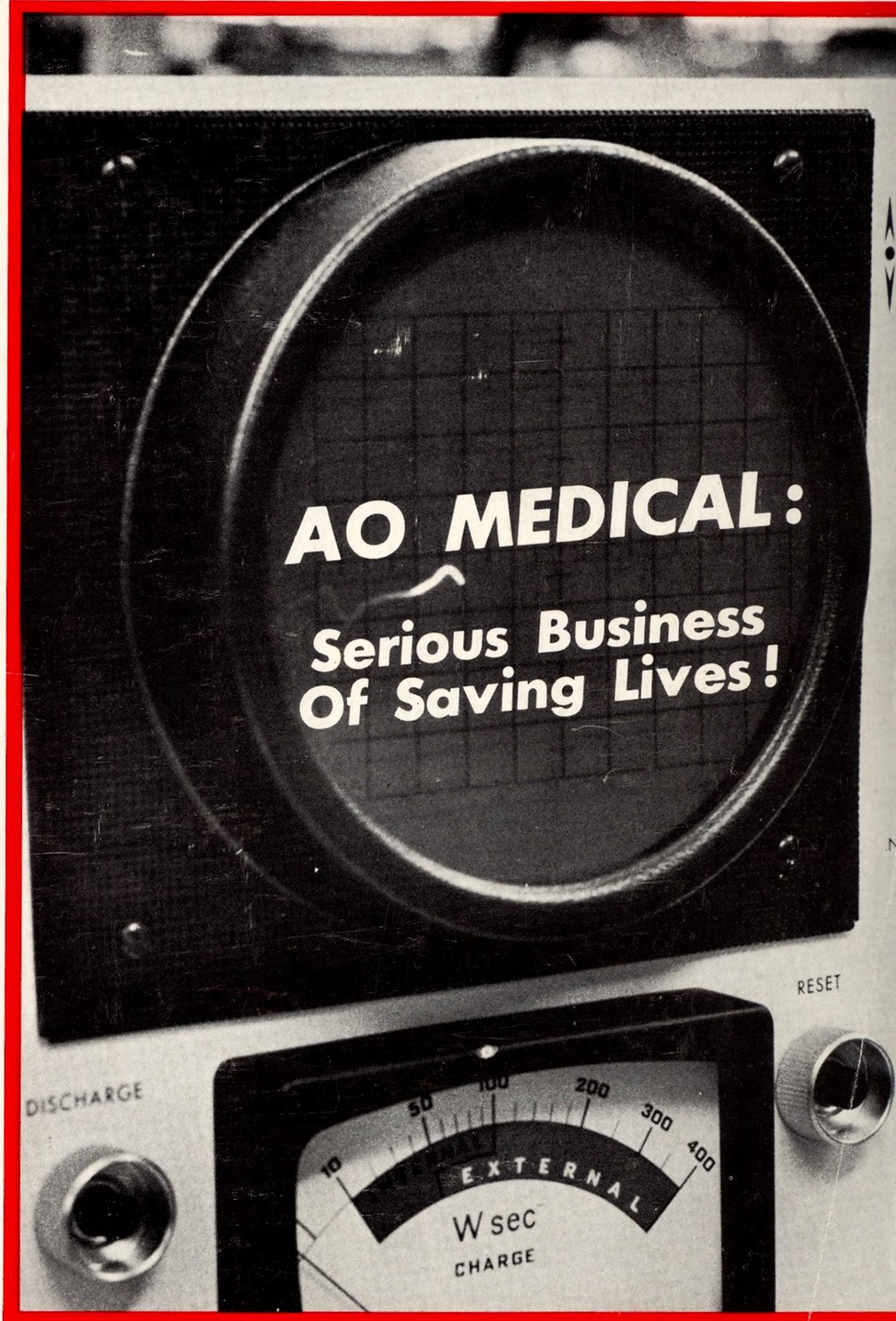
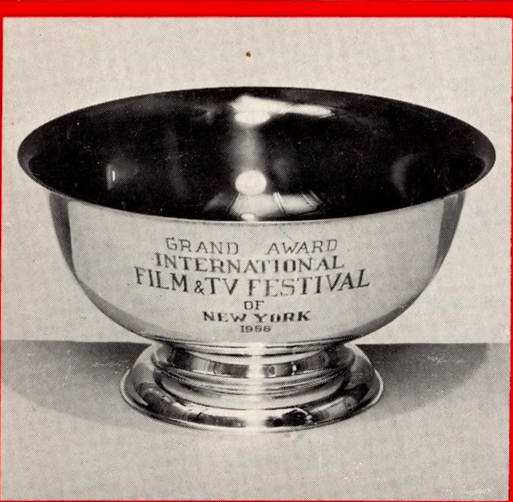


# AO NEWS

*For American Optical People*



**OPEN HOUSE AT  
THE PISTOL RANGE**



**OCTOBER 1966**

# AO MEDICAL:

A heart suddenly beats much faster than the human body can withstand. An electrical impulse, delivered automatically, slows it to normal. Another patient suffers from a potentially fatal slowing of his heart beat. An automatically-delivered impulse restores it to normal. The patient is alive . . . saved not by man himself, but by one of man's newest achievements - medical electronics.

Organized only three years ago to develop and market instruments for coronary care, AO's Medical Division is well on the road to becoming a major factor in medical instrumentation. Its product line — only one instrument in 1963 — features devices that cover every major area of medical instrumentation . . . electronic, electro-optical, and electro-mechanical.

Until last August, the Medical Division shared a building in Chelsea, Mass., with AO's sunglass subsidiary, Cool-Ray, Inc. Now, Medical has moved into a new 40,000 square-foot building in the Bedford (Mass.) Science Park . . . a move made essential by increased manufacturing and marketing commitments.

## DC DEFIBRILLATOR STARTS IT ALL

Every bit as dramatic as the growth story is the instrument that resulted in the organization of AO Medical. This was the DC Defibrillator. For many years, alternating current countershock was used as a desperate emergency measure for treating cases of ventricular fibrillation . . . or excessively fast heart beat. AO introduced the direct current Defibrillator which greatly reduced the risk involved in defibrillating procedures.

Two major advantages were gained. Direct current impulses delivered to the patient's heart are briefer than alternating current impulses and avoid damage to heart muscles. The possibility of insufficient energy to slow the heart at a critical moment no longer existed because direct current units store energy in a capacitor and are not affected by variations in line voltage.

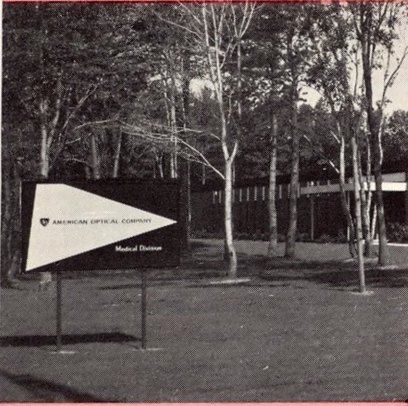
Late in 1962, the Lown Cardioverter was introduced by AO's Instrument Division. A result of teamwork between American Optical scientists and Dr. Bernard Lown of Harvard University, the Cardioverter was an instrument of major import to the medical professions. It made it possible to synchronize the DC countershock to a precise point in the heart cycle and thereby safely treat many other heart beat malfunctions.

Formerly, treatment of these heart beat irregularities required weeks or months of drug therapy. Now, a high percentage of cardiac arrhythmias can be terminated immediately with a single countershock through the closed chest.


More recently, the Demand Pacemaker was developed. This instrument automatically supplies electric stimulation to the heart only when necessary. Unlike conventional artificial pacemaking devices, the Demand Pacemaker doesn't compete with the natural heart beat.

Today, the Medical Division's product line is more than ten times larger than it was two years ago. Medical instruments bearing the AO nameplate now include monitoring oscilloscopes, heart-rate meters, remote alarm systems, and recorders such as the AO Memo Guard. This device continuously records, then erases, information on a patient's heart-beat cycle for pre-selected time periods. Should the

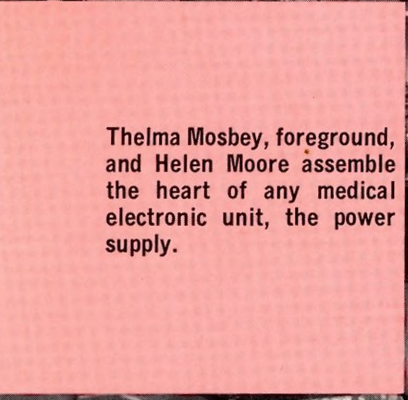
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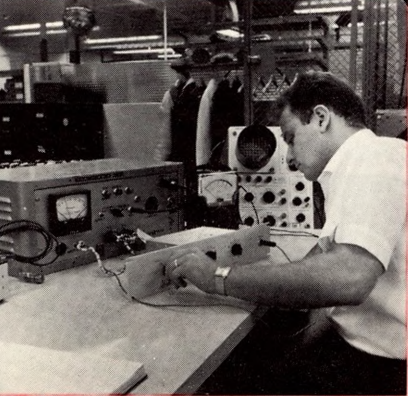
Thousands of wires must be integrated into each medical instrument. The first step, making a bridle, is Marie Mazzone's job.



Making medical instruments requires skill and patience. The hundreds of details involved can be seen in this unit assembled by Elizabeth Rivers.



Thelma Mosbey, foreground, and Helen Moore assemble the heart of any medical electronic unit, the power supply.



Robert Nagri is among those who put every life-saving Demand Pacemaker through its "paces" — electronically — before it is considered complete.

# Serious Business Of Saving Lives!

patient suffer a heart attack, an alarm sounds, the erase stops, and a record of heart activity before the seizure is retained for the physician.

Three new instruments were recently introduced. An improved version of AO's heart-lung machine used in surgery, and an oximeter that determines oxygen saturation from a small blood sample almost instantly, are now in production. The third, and even more revolutionary instrument, is the IV Hemoreflectometer. Utilizing a fiber optics catheter inserted into the heart, this electronic device measures oxygen saturation and cardiac output within the heart chambers. Data recorded is fed into a computer for instant analyzation.

## MARKETING COMMITMENTS GROW

Medical's marketing commitments have grown as fast as the product line. The customer is a member of the medical professions . . . cardiologists, anesthesiologists and cardiovascular surgeons. Also, the division's sales engineers frequently contact hospital administrators, consultants and architects.

The market itself, naturally, is a highly competitive one. But, Medical Division personnel have compiled an excellent record of accomplishment. This is best expressed by the fact that AO Medical products are used in more than 4,000 of the estimated 8,000 hospitals in the U.S. Moreover, better than 100 exclusively AO-equipped intensive cardiac care centers have been installed, ranging from two to twenty beds.

"A classic example of a successful science-oriented operation, combining superior technology and experienced personnel" is how Edgar O. Dixon, General Manager, sees the Division. Accordingly, Dixon has surrounded himself with key personnel selected for their experience and proven ability in their fields. Among these people are Dixon's managers, William Carberry, Development; Lloyd Hill, Manufacturing; and Edward Barry, Marketing. Also included in this group of key people is biophysicist, Barouh V. Berkovits, who has been responsible for a number of major development contributions in the medical field, both in Europe and the U.S.

But this careful selection of employees is true for the entire Medical Division staff. Each employee is thoroughly screened for his ability to learn the intricate procedures necessary in the manufacture of medical electronic equipment. After all, each manufacturing step contributes to an instrument that could mean the difference between life and death for someone, somewhere.

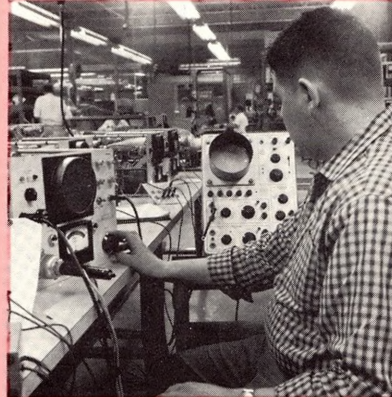
## NO TIME TO REFLECT

Little time is spent reflecting on past Medical Division triumphs. Thinking is directed toward the years ahead. Dixon describes medical instrumentation as "a field where one has to be advanced, simply to avoid being obsolete before he hits the market." The importance AO attaches to this theory is borne out by the measure of effort put forth in research on medical instrumentation. This not only includes electronic applications, but also medical uses for lasers and fiber optics.

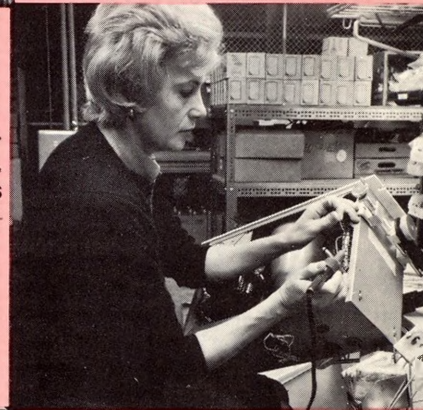
The Medical Division building, though less than four months old, is designed to be readily enlarged if necessary. At the cornerstone-laying ceremony last spring, W. Kelley Hannan, Executive Vice-President, Instrument Division, under which the Medical Division operates, gave the assembly a hint of top management's feelings. He stated that, "further expansion of the division's facilities is highly probable within a year or two."

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Medical's product line features complete coronary care units. Gloria Gomes, foreground, and Louise Ashley assemble monitoring units for the nurse's station.



Complete electronic checks are made of each instrument as soon as it is assembled. Here, Paul LaCharite tests a Lown Cardioverter.



Assembling AO Medical instruments is precision work. Here, Louise Ashley works on a Lown Cardioverter — an instrument carefully built to save lives.



The remarkable IV Hemoreflectometer is readied for shipping by Don Reinheimer, Special Services Manager. His group works on any special modifications ordered by customers.

Completed units in a variety of sizes. William Murphy checks unit which contains Lown Cardioverter, Demand Pacemaker, and DC Defibrillator.

