any point desired. Average access time is \( \frac{1}{2} \) sec. Individual units may be added to increase capacity. (Potter Instrument Co., Inc., Dept. 142)

- **Transistor Test Set** measures beta, \( I_{ce} \) and \( I_{eb} \) of both pnp and npn type transistors at any operating level. Component matching accuracy of approximately 2 percent is provided. \( I_{ce} \) ranges are 0 to 50 and 0 to 500 \( \mu \)A. Beta ranges are 10 to 100 and 100 to 1000, \( I_{eb} \) range is 0 to 50 \( \mu \)A. (Armour Electronics Inc., Dept. 135)

- **FREQUENCY STANDARD** is said to have instability less than 2 parts in 10^10 per week. It is a servo-controlled quartz oscillator, of high inherent stability, contained in a double oven. The servo control eliminates errors resulting from changes in circuit and tube parameters. Outputs are 10 and 1 Mcy/sec and 100 kcy/sec. (Marconi Instruments, Dept. 141)

- **X-Y Recorder** includes a built-in time-base sweep circuit. Five time intervals from 5 to 500 sec for full-scale pen travel may be selected. The instrument is a flat-bed recorder accommodating 8½-by-11-in. graph paper. Alternative use to plot one variable against another is available at the flip of a switch. (F. L. Moseley Co., Dept. 143)

- **TUBE FURNACE** of carbon-resistor type provides temperatures to 500°F. The furnace, of vertical design, is intended for use in testing of ceramic or metalurgical specimens. The work load is raised or lowered hydraulically at a continuously adjustable rate. Temperature control is effected by a radiation pyrometer, a circular-chart recorder controller, and a saturable reactor. Controls are capable of holding to \( \pm 20^\circ \)C at 5000°F in an atmosphere of inert gas. Heat-up from room temperature to 4500°F can be accomplished in 2 hr. (Pereny Equipment Co., Dept. 146)

- **Freezing Unit** for tissue specimens uses compressed Freon-12 to maintain temperature constant at approximately -30°F. Microtomes attach to the front plate of the device. The equipment is readied for use by turning on compressor standby switch in the morning. Standby power consumption is 50 w. (Scientific Products, Dept. 115)

- **Sample Coater** for laboratory study of painting materials operates on the timed-withdrawal principle. Withdrawal is accomplished by allowing the paint to drain by gravity flow from a tank suspending the sample to a second tank. Rate of withdrawal is controlled by valve adjustment. Tanks are raised and lowered by hand crank. (Gardner Laboratory Inc., Dept. 146)

- **Digital Delay Generator** produces two pulse delays independently adjustable from 1 to 10,000 \( \mu \)sec in 1-\( \mu \)sec steps. Continuous interpolation between steps is calibrated in 0.1 \( \mu \)sec. Time intervals are accurate within 0.1 \( \mu \)sec ± 0.001 percent of selected value. Intervals may be initiated from external pulses at repetition rates 0 to 10 kcy/sec, or from an internal rate generator 10 cy/sec to 10 kcy/sec. Total jitter does not exceed 0.02 \( \mu \)sec. (Hewlett-Packard Co., Dept. 144)

- **ION Chambers** are designed for operation at temperatures up to 300°C. Available are compensated and uncompensated neutron-sensitive chambers, gamma-sensitive chambers, fission counters, and proportional counters for neutron-flux charges from 10^-3 to 10^14 NV. All are sealed-chamber units. The compensated chambers have a fixed geometrical compensation exceeding 95 percent. (General Electric, Dept. 121)

- **INCUBATOR** provides visibility of every vessel inside without opening door. The incubator chamber, a cylinder 10 in. long and 14½ in. in diameter cylinder, has four shelves. (Central Scientific Co., Dept. 152)

- **Strip-chart Recorders** are available in a variety of widths and with a variety of movements. Recording is rectilinear and direct writing in both inkless and inking models. D’Arsonval movement is used for direct current; a rectifier is provided for alternating current. Dynamometer movements are used for ac r.m.s. The standard size has a chart width of 4-11/16 in. and accommodates up to three channels. Six chart speeds are selectable. (Curtiss-Wright Corp. Dept. 149)

**Joshua Stern
National Bureau of Standards**

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**PERSONNEL PLACEMENT**

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