

16-17. Textile Engineering Conf., American Soc. of Mechanical Engineers, Clemson, S.C. (ASME Meetings Dept., 29 W. 39 St, New York 18)

16-18. Aviation/Space Education, 5th natl. conf., Washington, D.C. (Natl. Aviation Education Council, 1025 Connecticut Ave., NW, Washington 6)

17-19. International Medical Conf., Liège, Belgium. (Medical Commission of the FIR, Castellezgasse 35, Vienna II)

19-25. American Soc. of Photogrammetry, American Cong. on Surveying and Mapping, Washington, D.C. (C. E. Palmer, ASP, 1515 Massachusetts Ave., NW, Washington 5)

20-22. American Physical Soc., Monterey, Calif. (W. A. Nierenberg, Univ. of California, Berkeley 4)

20-23. Institute of Radio Engineers, 1961 intern. convention, New York, N.Y. (E. K. Gannett, IRE, 1 E. 79 St., New York 21)

20-24. American Surgical Assoc., Boca Raton, Fla. (W. A. Altemeier, Cincinnati General Hospital, Cincinnati 29, Ohio)

20-24. National Health Council, forum and annual meeting, New York, N.Y. (NHC, 1790 Broadway, New York 19)

20-24. Western Metal Cong. and Exposition, 12th, Los Angeles, Calif. (A. R. Putnam, American Soc. for Metals, Metals Park, Ohio)

21-23. American Meteorological Soc., general meeting, Chicago, Ill. (E. P. McClain, Dept. of Meteorology, Univ. of Chicago, Chicago 37)

21-23. American Physical Soc., Division of High-Polymer Physics, 21st, Monterey, Calif. (D. W. McCall, Bell Telephone Laboratories, Murray Hill, N.J.)

21-23. American Power Conf., 23rd annual, Chicago, Ill. (W. C. Astley, Philadelphia Electric Co., 900 Sansom St., Philadelphia 5, Pa.)

21-24. American Assoc. of Anatomists, 74th annual, Chicago, Ill. (O. P. Jones, Dept. of Anatomy, Univ. of Buffalo, Buffalo 14, N.Y.)

21-30. American Chemical Soc., 139th, St. Louis, Mo. (A. T. Winstead, ACS, 1155 16th St., NW, Washington 6)

23-25. American Orthopsychiatric Assoc., 38th annual, New York, N.Y. (M. F. Langer, AOA, 1790 Broadway, New York 19)

23-25. Quantum Electronics, 2nd intern. conf., Berkeley, Calif. (J. R. Singer, Dept. of Electrical Engineering, Univ. of California, Berkeley 4)

23-26. International Assoc. for Dental Research, 39th annual, Boston, Mass. (D. Burrill, IADR, 311 E. Chicago Ave., Chicago 11)

24-29. National Science Teachers Assoc., Chicago, Ill. (R. H. Carleton, NSTA, 1201 16th St., NW, Washington 6)

26-29. American Assoc. of Dental Schools, annual, Boston, Mass. (R. H. Sullens, 840 N. Lake Shore Dr., Chicago 11)

27-31. Temperature—Its Measurement and Control in Science and Industry, natl. symp., Columbus, Ohio. (C. M. Herzfeld, Natl. Bureau of Standards, Washington 25)

30-1. Southern Soc. for Philosophy and Psychology, Atlanta, Ga. (D. R. Kenshalo, Dept. of Psychology, Florida State Univ., Tallahassee)

(See issue of 20 January for comprehensive list)

3 FEBRUARY 1961

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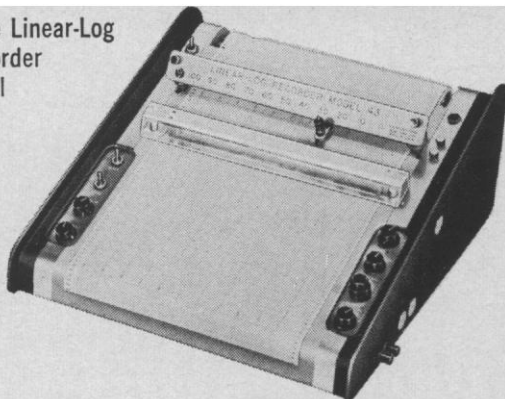


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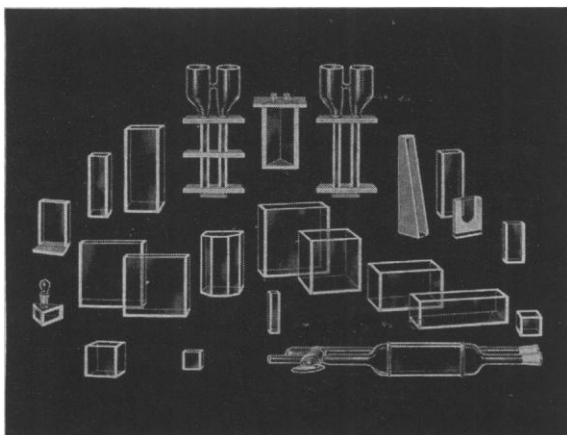
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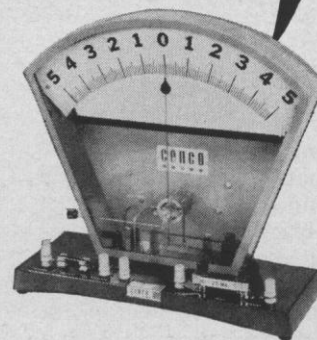
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## New Products

*The information reported here is obtained from manufacturers and from other sources considered to be reliable. Neither Science nor the writer assumes responsibility for the accuracy of the information. All inquiries concerning items listed should be addressed to the manufacturer. Include the department number in your inquiry.*

■ **ELECTRONIC TRACKER** locks on a target and tracks it at distances from a few feet to several hundred miles, according to the manufacturer. The instrument is a specially developed electron tube. In operation an optical image of a black-and-white target is projected on a photocathode by a lens. The emitted electron image is presented at a 0.001-in. diameter dissecting aperture, which passes electrons to an electron multiplier. Output from the multiplier is fed to horizontal deflection plates to keep the electron image stationary at the dissecting aperture. This controlling feedback signal is a measure of the electron deflection required to compensate for motion of the target and hence is a measure of the object's displacement. The diameter of the active photocathode is 1.2 in.

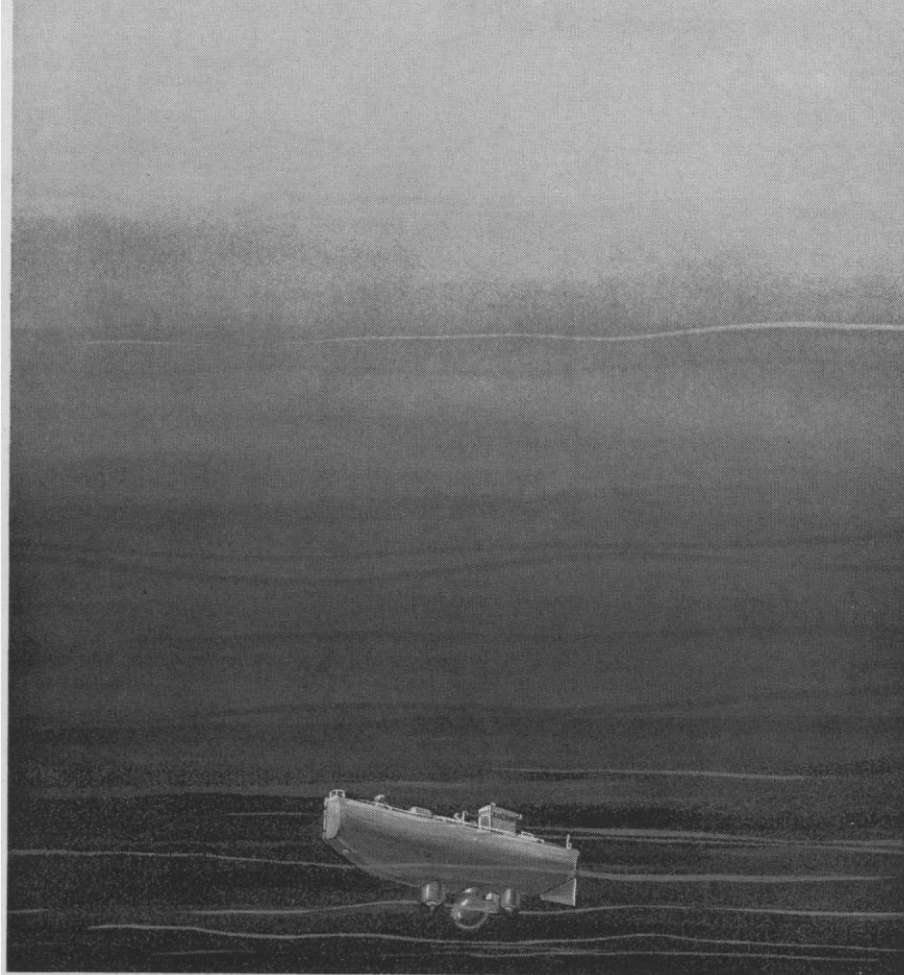
Working distance depends on the lens used. By using terrestrial telescopes, it may be extended to several miles or out to distant stars. The target may be an illuminated black and white pattern or any edge or optical discontinuity, or it may be self-luminous. With ambient illumination of 40 ft-ca falling on the target, the resolution is said to be 1 part in 3000. At 0.1 ft-ca, resolution is 1 part in 100.

Time constant of the tube is 1  $\mu$ sec; over-all frequency response is static to 5 kcy/sec. Output signal is 10 volts full scale at 150 ohms. Spectral response is S11, 3000 Å to 7000 Å with peak at 4400 Å. Noise of the photocathode is  $10^{-16}$  amp/cm<sup>2</sup> at 22°C. The tube is 5 in. in diameter and 18 in. long; the tracker measures 10 by 12 by 24 in. (Optron Corp., Dept. Sci70, 335 S. Salinas St., Santa Barbara, Calif.)

■ **STEREOTAXIC INSTRUMENT** is designed to make it possible to conduct experiments on small dogs, such as beagles, terriers, and others weighing 10 kg or less, where cranial regularity can be found. Other models now in use in the field can be sent to the manufacturer for modification for use with small dogs. (H. Neuman & Co., Dept. Sci74, Skokie, Ill.)

■ **DIGITAL CLOCK** provides a visual display of 4, 5, 6, or 7 digits and contact closure outputs. Timed pulses are generated in the clock by a synchronous motor-operated switch. A mercury relay drives all of the time-generating rotary stepping switches. Contact closure outputs may be either parallel

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or series. A push button for each display window permits independent setting of each digit, a rotary switch selects readout interval, and an "advance inhibit" prevents any change in displayed time during a readout cycle. (Datex Corp., Dept. Sci79, 1307 S. Myrtle Ave., Monrovia, Calif.)

■ **ULTRAVIOLET ANALYZER SYSTEM** for automatic analysis of flowing effluent from chromatography and electrophoresis columns detects and records absorption at 2537 Å. A record event marker in the recorder provides correlation between test tubes containing a relevant sample and the indicated chart record. The three instruments that make up the system—an ultraviolet absorptiometer, a recorder, and a fraction collector—can also be used independently. (LKB Instruments Inc., Dept. Sci69, 4840 Rugby Ave., Washington 14, D.C.)

■ **DIGITAL COMPARATOR** accepts digital information as input and compares it with preset high and low tolerance limits at rates said to be as high as 100,000 comparisons per second. Appropriate limits for each measurement are transferred to high- and low-limit registers from a tape reader or other programming device. Visual output indicators and electrical output signals to operate a printer or control circuitry are available. Solid-state circuitry is used throughout. Power requirement is 1 amp at 15 volts. (Leach Corp., Dept. Sci71, Compton, Calif.)

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JOSHUA STERN  
National Bureau of Standards,  
Washington, D.C.

H<sup>3</sup>

C<sup>14</sup>

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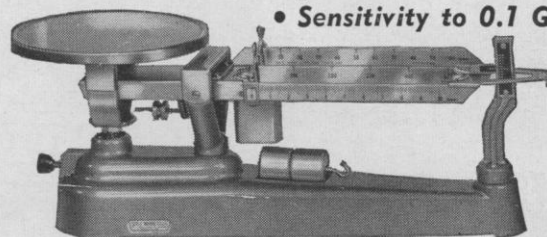


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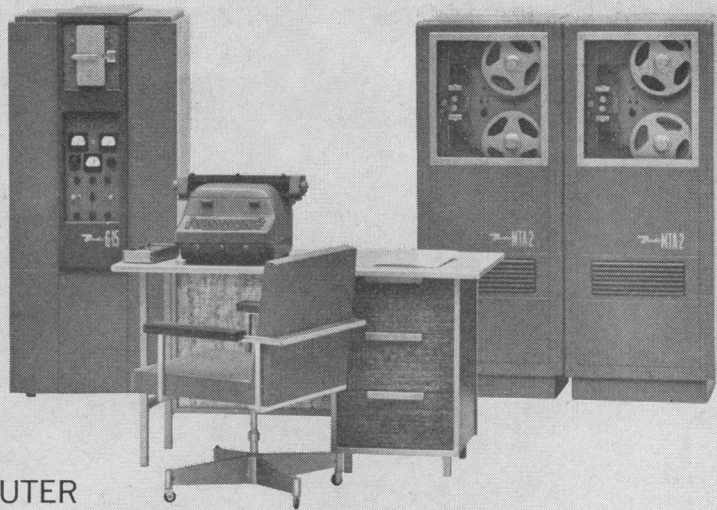
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FOR THE BENDIX G-15 COMPUTER



## Speeds and Simplifies Problem Solving

ALGO extends the problem-solving horizon of every engineer, focusing the speed and precision of the Bendix G-15 computer on any algebraically stated problem. ● A true mathematical equation solver, ALGO permits any engineer or scientist to program the computer in universal mathematical language. No previous knowledge of computers or programming is needed. Input/output, computation and data handling are all automatically controlled by the G-15 computer. ● Compare the number of steps in the ALGO program illustrated below with the number required to solve the same problem on a slide rule, desk calculator or any other computing system. You will see the time and cost-saving significance of this new Bendix G-15 automatic programming aid. ● Specifically designed to take advantage of the computing power and flexibility of the proven G-15, ALGO is the newest addition to an extensive library of Bendix automatic programming systems. See how the low-cost Bendix G-15 and ALGO combine to broaden application boundaries. Learn how this powerful team can save you valuable time...and greatly simplify problem solving.

\* AN ALGEBRAIC COMPILER BASED ON INTERNATIONAL ALGOL.

PROBLEM: 
$$I = \frac{E}{\sqrt{R^2 + (6.2832 FL - 1/6.2832 FC)^2}}$$

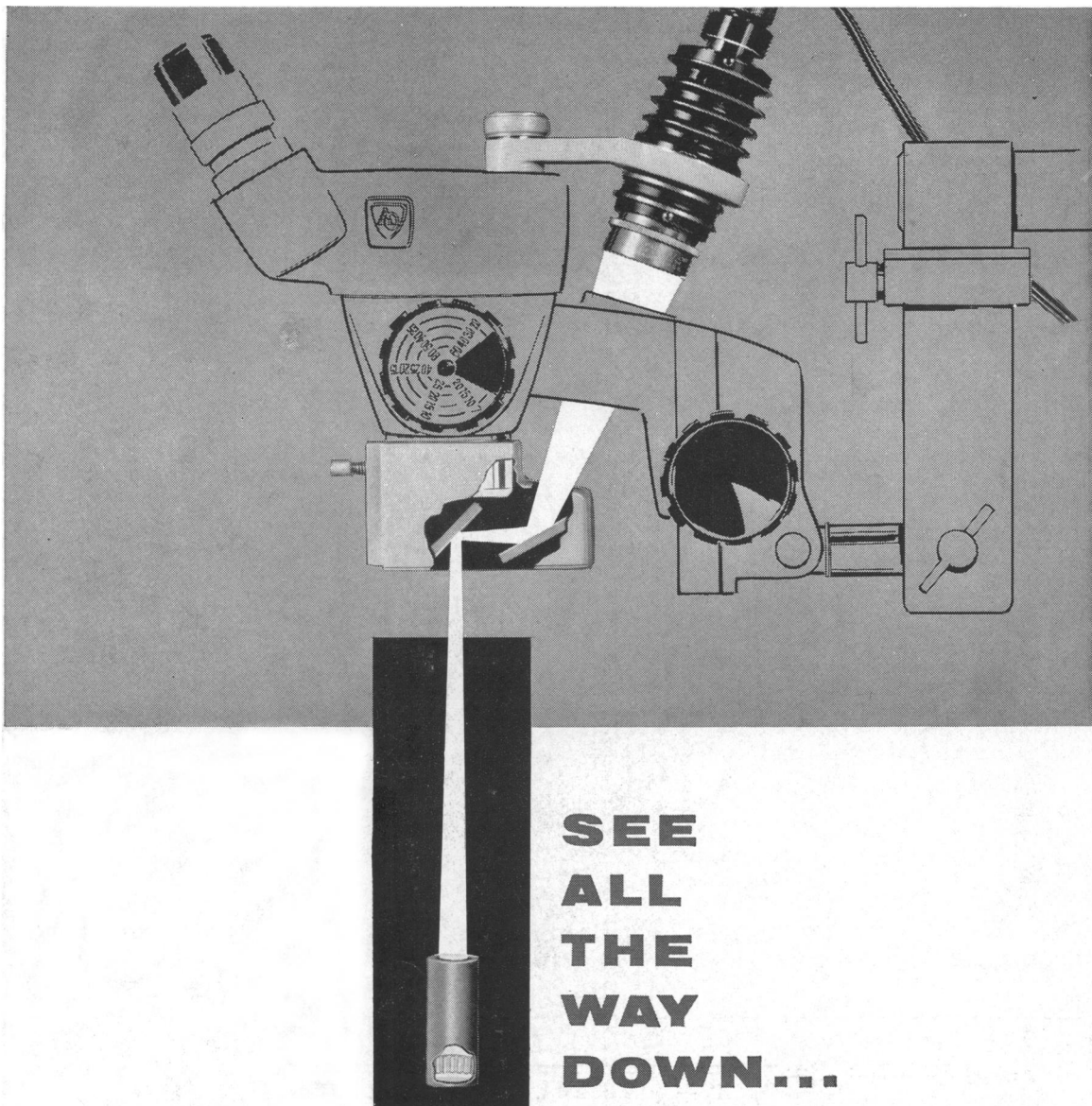
(For values of R, F & L as specified. For values of E ranging from 100 to 300 in increments of 50. For values of C ranging from .00002 to .000021 in increments of .000001)

```
COMPLETE ALGO PROGRAM: BEGIN Ⓢ
R = 10 Ⓢ
F = 60 Ⓢ
L = .02 Ⓢ
FOR E = 100(50)300 BEGIN Ⓢ
FOR C = .00002(.0000001).000021 BEGIN Ⓢ
I = E/SQRT(R ↑ 2 + (6.2832 * F * L - (1/(6.2832 * F * C))) ↑ 2) Ⓢ
PRINT (FL) = E Ⓢ
PRINT (FL) = C Ⓢ
PRINT (FL) = I Ⓢ
```

Write on your letterhead for the self-teaching ALGO manual.

**Bendix Computer Division**  
DEPT. AO-23 LOS ANGELES 45, CALIFORNIA





**SEE  
ALL  
THE  
WAY  
DOWN...**

***NEW, AO Spencer Vertical Illuminator allows stereoscopic magnification deep inside small diameter openings***

The new Vertical Illuminator and the AO Spencer Cycloptic Stereoscopic Microscope make a unique team that can be the answer to your problem whether it's the inspection of detail in small diameter, deep hole borings, or delicate assembly of miniaturized parts where every move is critical.

This low-cost illuminator readily attaches to the Cycloptic to provide efficient, shadowless illumination deep inside small orifices...and the Cycloptic delivers

realistic, erect, true three-dimensional magnification of the illuminated detail.

The remarkable long working distance afforded by Cycloptic (up to 7 inches when Illuminator is used with 53 and 59 Series) gives you *plus* advantages...permits ample room for large objects or inspection and assembly tools.

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Dept. P-1

Please send me FULL INFORMATION on the NEW AO SPENCER VERTICAL ILLUMINATOR AND CYCLOPTIC MICROSCOPES.

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