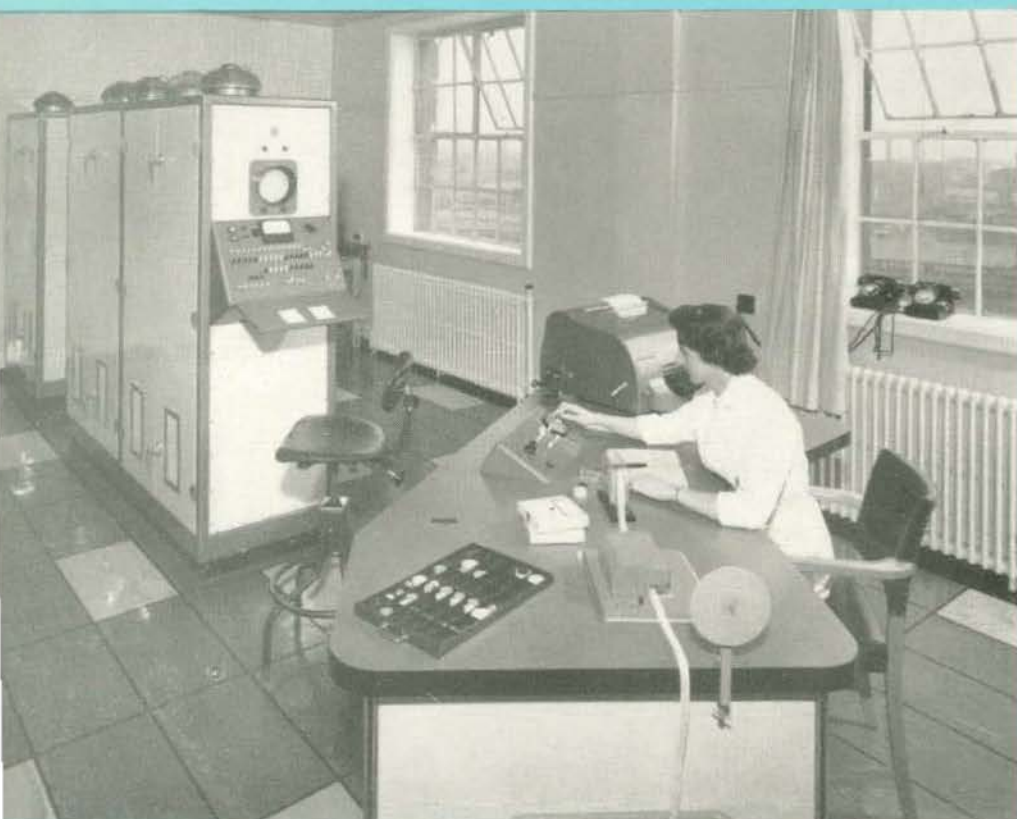# STANTEC ZEBRA

## ELECTRONIC DIGITAL COMPUTER

APR 2 1961

The 'basic' Zebra, shown above, is used mainly for mathematical and scientific research. Because it can be adapted for use with most forms of input/output equipment, Zebra can also serve as the control centre for small or medium-sized Data Processing Systems.

Zebra compares favourably with larger machines, and in its field leads in performance, reliability and flexibility. This is due both to the novel programming philosophy upon which it is based and to the up-to-date methods of equipment practice used in its construction, which incorporate, for example, overall use of plug-in units and printed circuitry and the judicious selection of transistors for track switching.

# BRIEF TECHNICAL SPECIFICATION

| | |
|---|---|
| Mode | Serial/binary. |
| Word Length | 33 binary digits (including 1 sign digit). |
| Word Time | 312 microsecs. |
| Main Store | Magnetic drum with capacity of 8,192 words. Speed of 6,000 r.p.m. Maximum access time of 10 ms (average of 5 ms). |
| Computing Store | 12 immediate access registers, each of 1-word length. 2 accumulators. |
| Optimum Operation Times | Addition, subtraction—312 microsecs. Multiplication — 11 ███████ millisecs. Division — 35 ███████ millisecs. |
| Monitor/Test | Monitoring C.R.T. displays contents of four stores at any one time; Marginal control facilities; Test keys for maintenance checking; Plug-in units for ease of maintenance. |
| Power Supply | Approximately 5 kvA. |

# SOME PROGRAMMING FEATURES

| | |
|---|---|
| **Normal Code** | 15 single letters each perform a particular basic operation of arithmetic, transfer, control or testing. Many operations can be executed in the same word time—this increases the intrinsic speed and flexibility of the machine. |
| **Simple Code** | This is a simple order code, slower than the Normal Code; yet favourable speeds may be obtained. *All calculations are performed in floating point.* Sample Simple Code performance: inversion of a $30 \times 30$ matrix in 63 minutes. In using these codes, Zebra can be made to operate as a $1 + 1$-address, 2-address, or $1 + B$ (modifying)-address machine. |

# BASIC INPUT/OUTPUT

| | |
|---|---|
| **Input Medium** | Normally 5-channel punched paper tape. |
| **Input Device** | A high speed photo-electric paper tape reader normally operating at 100 characters per second (maximum is 200 characters per second). |
| **Output Devices** | High speed paper tape punch at 50 characters per second. 7-character per second on-line teleprinter (50 bauds). |