# Transistorized Automatic Computer (TAC)
## Type S 3300

ORIGINALLY designed as a general-purpose digital computer for radar data handling, this computer is equally suitable for all on-line applications where high speed, flexibility and reliability are required.

### Features

Suitable for all on-line real-time applications.

Up to 63 separate input/output channels.

Independent external interrupt facilities on each input/output channel.

Transistors used throughout.

High speed.

Comprehensive programme monitoring and checking facilities.

Engineered to full military standards ensuring high reliability. A relatively small number of basic circuits are used which are of well established design.

### EQUIPMENT

The input/output system allows for up to 63 separate input/output channels. Each channel has an associated 'interrupt' line, enabling peripheral equipment, connected to the channel, to cause the computer to cease work on its main programme and link to a sub-routine. The sub-routine may be related to input or output data or may be the performance of computations on newly received information.

The interrupt facility together with the relatively high speed of the machine (10 $\mu$s to input a 20-bit word on unlimited input) permits the use of a wide variety of peripheral units with (in some applications) considerable saving in compatibility and buffer equipment. The computer can thus be integrated with virtually any environment to produce a highly economical system; computer time is shared between external circuits according to their requirement.

In addition to normal computer equipment such as high-speed tape punches and readers, a wide range of versatile input/output devices is available for on-line working. They include push-button and keyboard units, tabular displays on CRTs and on-line teleprinters connected either directly or over data link equipment.

The standard 4096-word ferrite-core store may be supplemented by English Electric
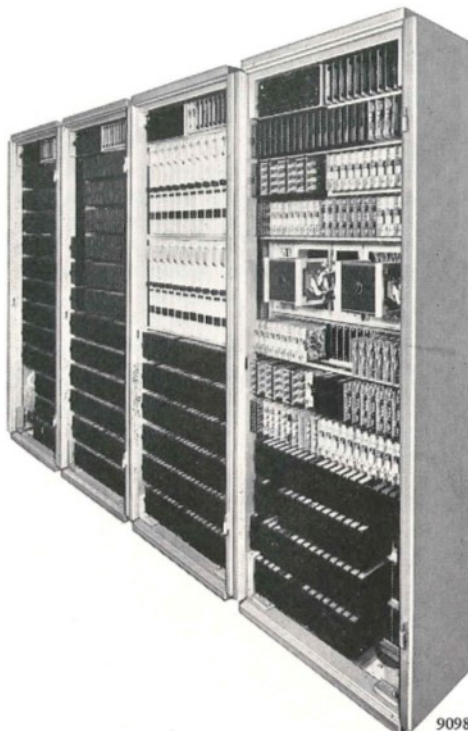


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magnetic tape stations connected to the computer input/output channels, information transfer being carried out at a speed of 33,000 six-bit characters per second.

A comprehensive order code of 64 functions includes powerful modify instructions enabling a maximum of work to be performed with a minimum of orders. Programming is, however, relatively simple and programme checking is facilitated by the inclusion of 'stop' and 'check' digits in each computer instruction word, enabling the computer to be stopped or to link to a check routine at any point in its programme. The operating panel includes indicators to show the instantaneous contents of each register, as well as all keys and switches for computer control and programming.

### Data Summary

**Type:** Parallel binary fixed point.
**Clock frequency:** 500 kc/s.
**Word length:** 20 binary digits.
**Working store:** 4096-word ferrite-core store (10$\mu$s access time).
**Input/output channels:** 63 maximum.

**Typical order speeds:** Add 22 $\mu$s.
Input/output 16 $\mu$s. Multiply 92 $\mu$s.
Square root 80 $\mu$s.
**Instruction format:**

| | |
|---|---|
| Stop | 1 digit |
| Check | 1 digit |
| Order | 6 digits |
| Store address | 12 digits |

For certain instructions store address digits modify the order.
**Power supply:** 230V, 50–60 c/s single-phase AC.
**Power consumption:** 1·2 kVA.
**Dimensons:**

| Height | Width | Depth |
|---|---|---|
| 6 ft 10 in. | 10 ft | 1 ft 3 in. |
| (208 cm) | (306 cm) | (38 cm) |

### Marconi