



Transistorized Automatic Computer (TAC) Type S 3301

THIS is a general-purpose digital computer designed specially for radar data handling. It combines high speed with flexibility and reliability.

Features

Suitable for all on-line real-time applications.

Up to 100 separate input/output channels.

Independent external interrupt facilities on each input/output channel.

Transistors used throughout.

High speed.

Comprehensive programme monitoring and checking facilities.

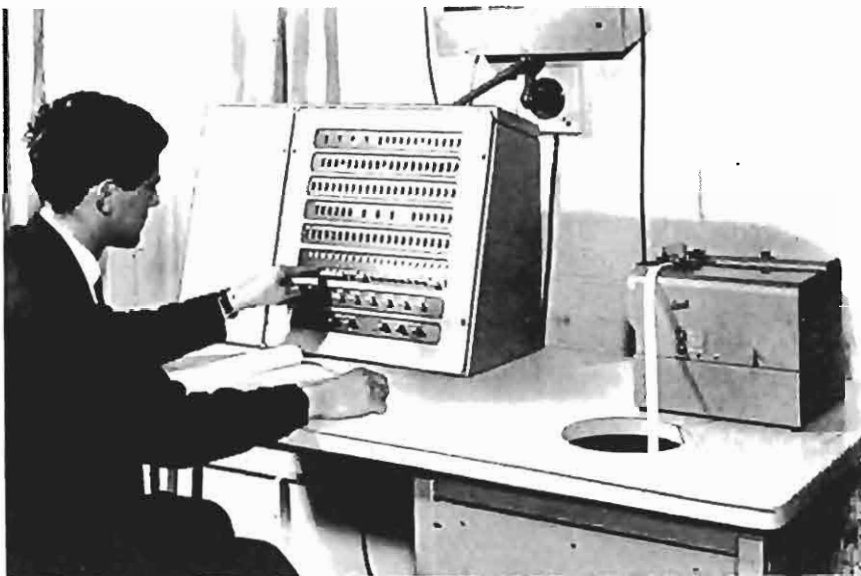
Engineered to full military standards ensuring high reliability. A relatively small number of basic circuits are used which are of well established design.

EQUIPMENT

'TAC' is a high-speed general-purpose digital computer intended for real-time computation and system control. It has a number of special facilities which make it particularly suitable for on-line applications where high speed, flexibility and reliability are required.

A feature of the design is the highway input/output system which allows for the order of 100 separate peripheral devices to be connected to the machine. These devices may include normal computer equipment such as high-speed type punchers and readers as well as keyboards, teleprinters and data links. In addition the machine can handle scanners sampling analogue and digital measurements and can provide outputs to displays and to control industrial plant. In particular the Marconi Tabular Display is designed for direct operation by this machine.

The programme interrupt facility and the high speed of the machine (input $10 \mu\text{s}$, addition $22 \mu\text{s}$) permit the peripheral devices to operate virtually simultaneously. As each device requires to communicate with the computer it can send out an interrupt signal which will demand the attention of the computer, subject to priority, and allow the data transfer to take place. Depending on the programme complexity many hundreds of interrupts can be accepted each second



The computer control desk.

so that the machine can be integrated easily with virtually any environment, computer time being shared between external systems according to their requirements.

The internal store may be supplemented by external ferrite-core stores, drum stores or magnetic tape stations according to the application.

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 manual includes indicators to show the instantaneous contents of each register, as well as the 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 ($10 \mu\text{s}$ access time).

Input/output channels: 100 maximum.

Typical order speeds: Add $22 \mu\text{s}$.

Input/output $16 \mu\text{s}$. Multiply $92 \mu\text{s}$.

Square root $80 \mu\text{s}$.

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 a.c.

Power consumption: 1.2 kVA.

Dimensions:

Four racks overall

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

Desk

Height	Width	Depth
2 ft 7 in.	4 ft 9 in.	2 ft 4½ in.
(78 cm)	(144 cm)	(72 cm)

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