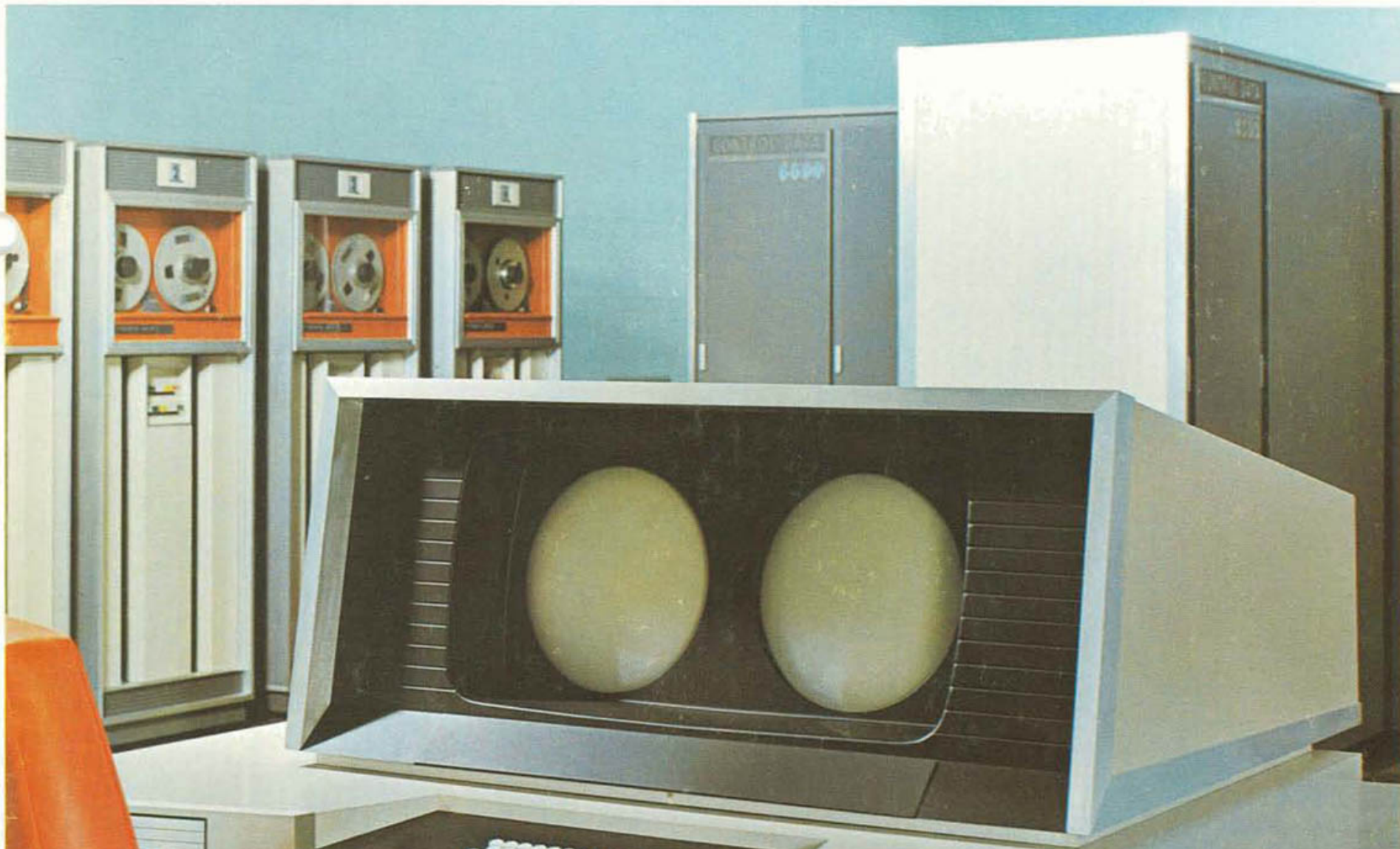
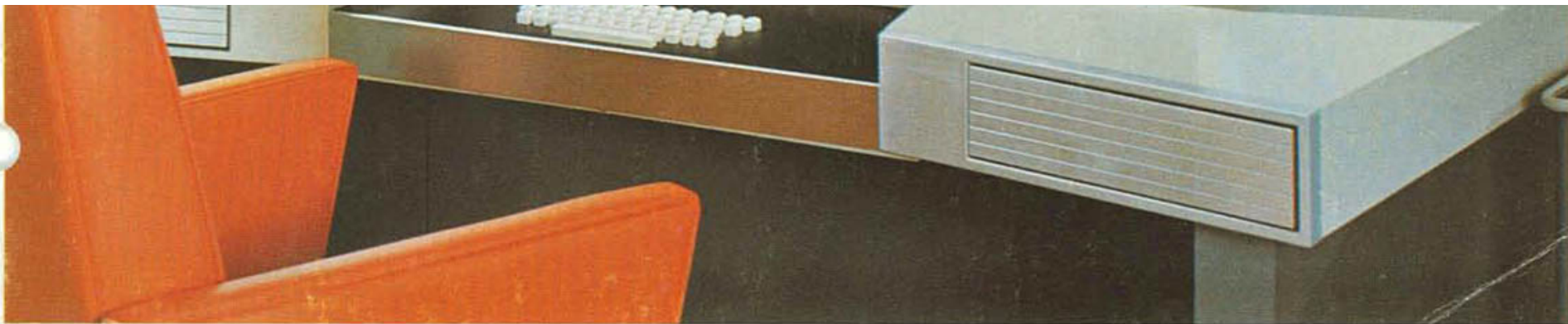
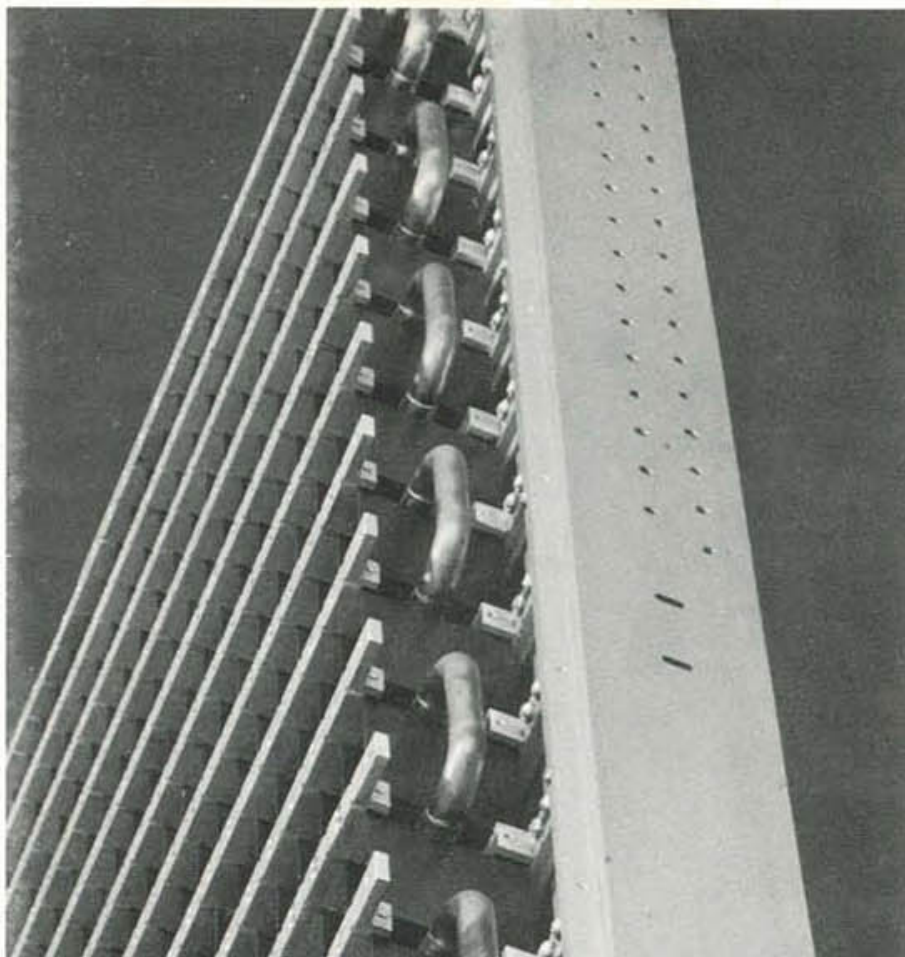


# SOME FACTS ABOUT THE CONTROL DATA<sup>®</sup> 6600





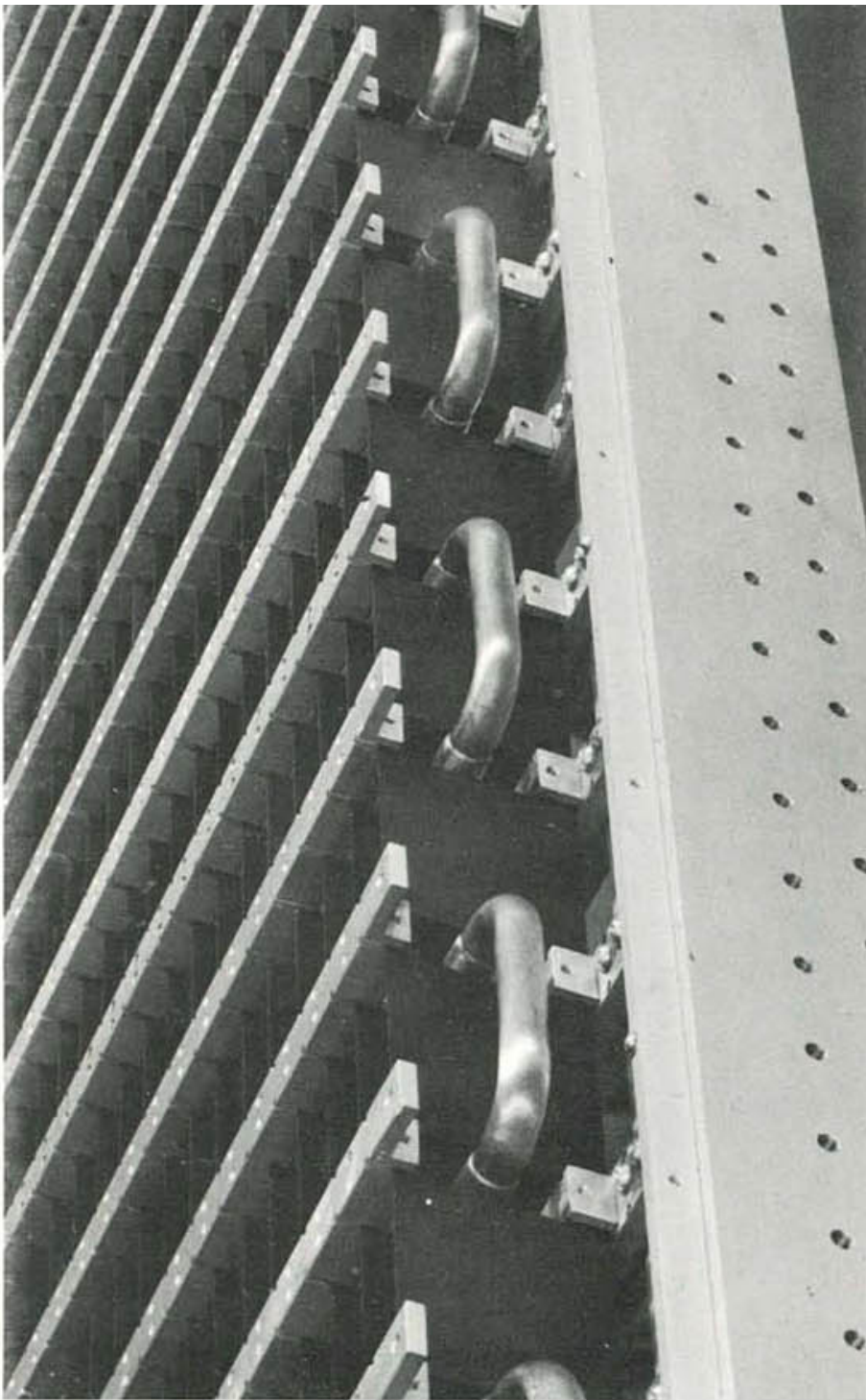
The Operator's keyboard only supported upper case letters.. (There was no lower case)



This brochure contains some of the basic facts about the **Control Data 6600**, designed to be faster and to have greater capability than any computer now existing. The 6600 system consists of a single central processor which contains: ultra high-speed arithmetic and logical functions, a central memory of 131,072 words of magnetic core storage, plus built-in peripheral and control processors; associated consoles; and the capability of handling an almost unlimited variety of peripheral equipment.

Because the 6600 represents a definite break with the past in computer design, only a few of the relevant facts describing the 6600 can be presented in this limited space. However, it is hoped that these will at least provide a brief introduction to the entirely new computer philosophy made manifest in the 6600.





**Copper tubing used in cooling the components and memory**

the 6600.

## 6600 FACTS:

The **Control Data** 6600 Computer is freon-cooled, which means there is no moving air in the machine as there is in traditional computers.

In the 6600 Computer only silicon components are used.

High density packaging in the 6600 is achieved through a unique packaging design. The technique employed results in more components per cubic inch than in previous designs.

The machine logic in the 6600 is propagation time-oriented, i.e., the internal logic timing is controlled by propagation time on wire.

The 6600 Computer executes on the average of over 3 million instructions per second.

All logic and memory elements used in the 6600 are mounted on page frames which swing open for easy accessibility.

The 6600 central memory consists of 131,072 words of magnetic core storage having 32 independent banks.

elements.

The 6600 employs **pluggable** memory system mod-

ules, each consisting of 4096 words of magnetic core storage.

The word length of the 6600 central memory is 60 bits.

There are 10 built-in independent Peripheral and Control Processors in the 6600 Computer, each having a 4096-word core memory. These memories are **in addition** to the 6600 central memory.

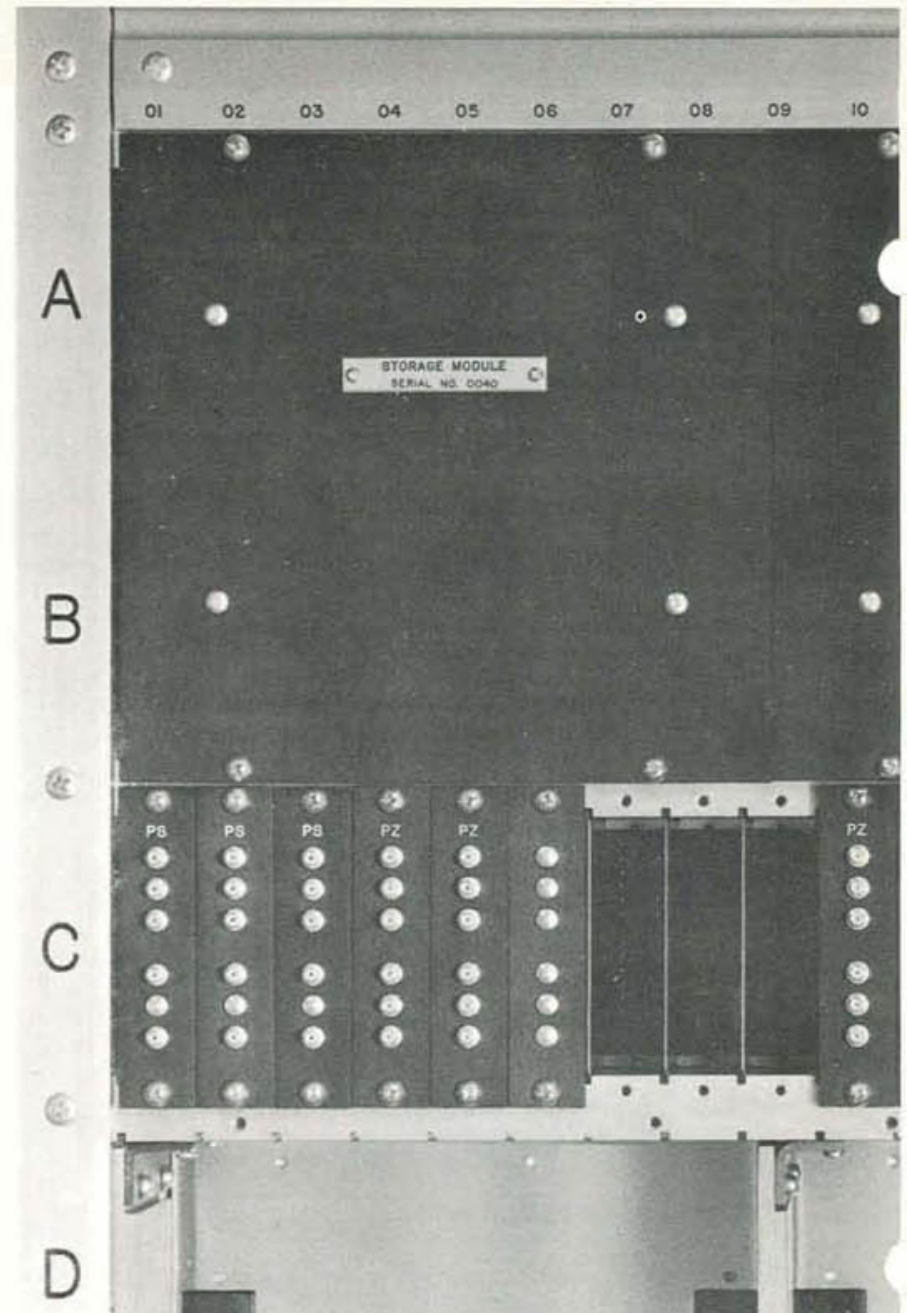
There are 10 functional units in the 6600 Central Processor, as follows:

- 2 Adders
- 2 Multipliers
- 2 Incrementers
- 1 Divider
- 1 Shift
- 1 Boolean
- 1 Branch

These functional units operate on 8 increment registers of 18-bit length, 8 operand registers of 60-bit length, and 8 memory address registers of 18-bit length. Up to 32 instructions can be held at once for program loops.

There are several levels of concurrency in the 6600 Computer, broadly consisting of:

- Concurrency in program execution in the 10





built-in Peripheral and Control Processors.

- Concurrency in the 10 basic Central Processor functions.
- Concurrency in the 32 independent banks of the Central Memory.

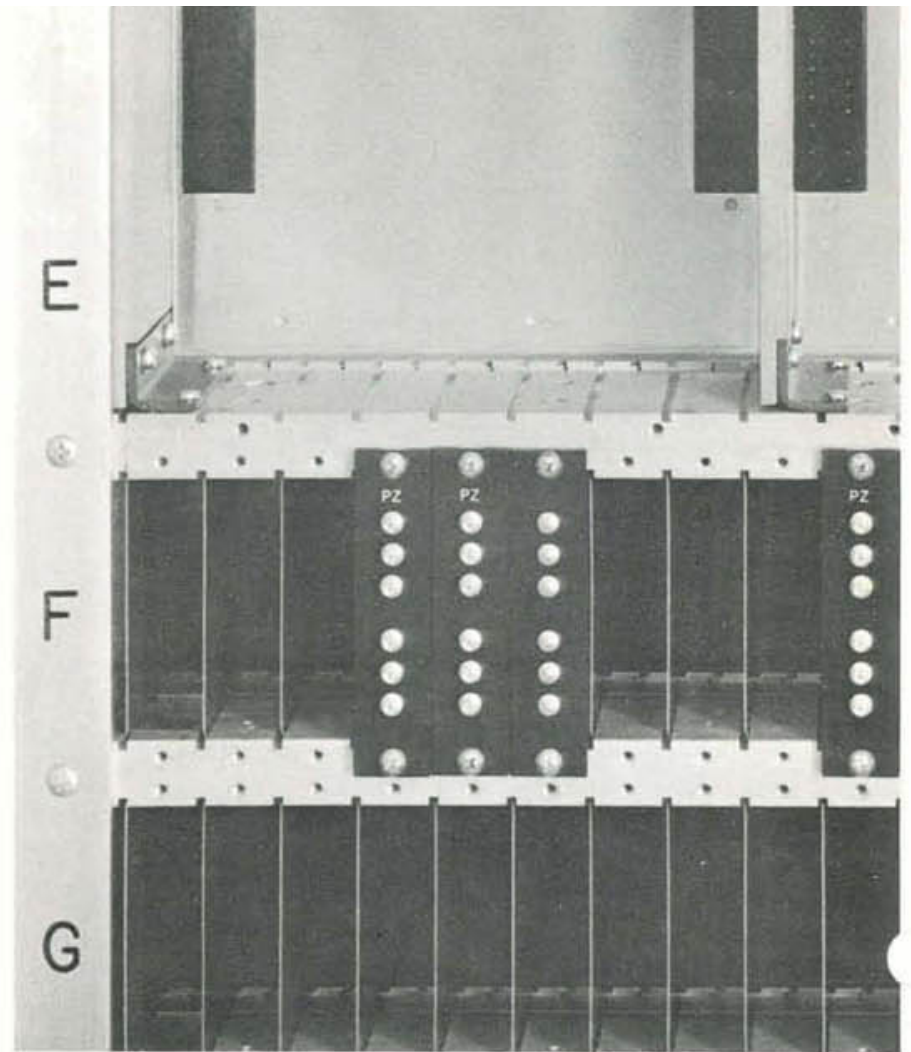
**Eleven** programs are run simultaneously on the 6600 Computer. These programs are **not** time-shared.

The 6600 Computer provides maximum operator/machine communications via its console tube display, which includes keyboard.

Initial software for the 6600 is scientifically oriented, with FORTRAN as the base language.

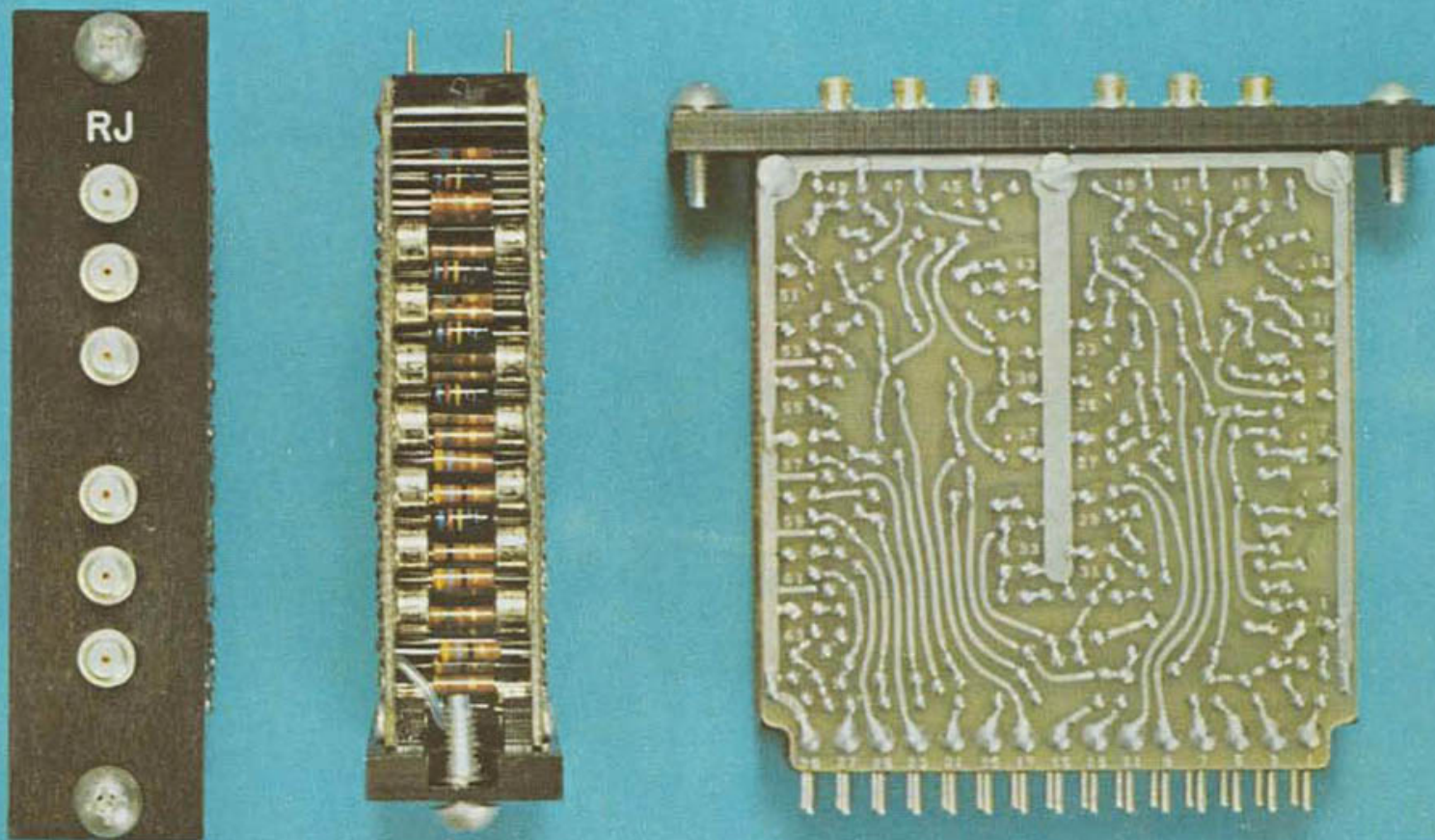
The 6600 renders practical the formulation and solution of large-scale 3-dimensional mathematical models.

The 6600 Computer has **three times the speed** as set forth in the initial specifications. In short, performance was significantly upgraded during development.



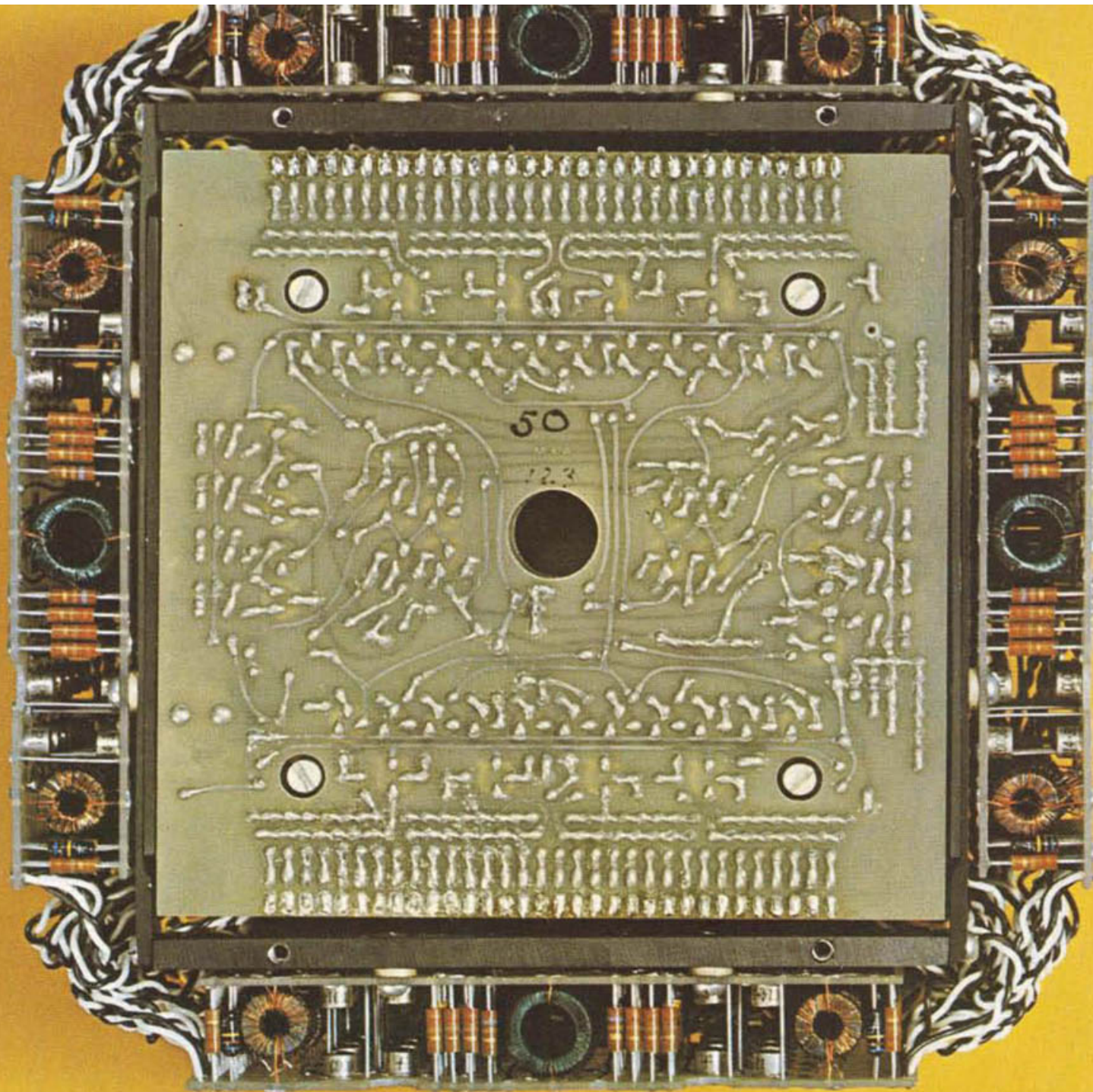
Memory system module installed on the page frame; below, the housing area and connectors into which the memory system module is positioned.

Logic module used in 6600 (actual size).



"Cordwood" module 3" x 2.5" x 0.75" (Approx 8 x 7 x 2 cm). Two rows of 15 pins in back, and 6 connectors on front for test probes. Discrete components (transistors, resistors, toroid rings, etc. ) sandwiched between two printed-circuit boards. Also surrounding memory module below.

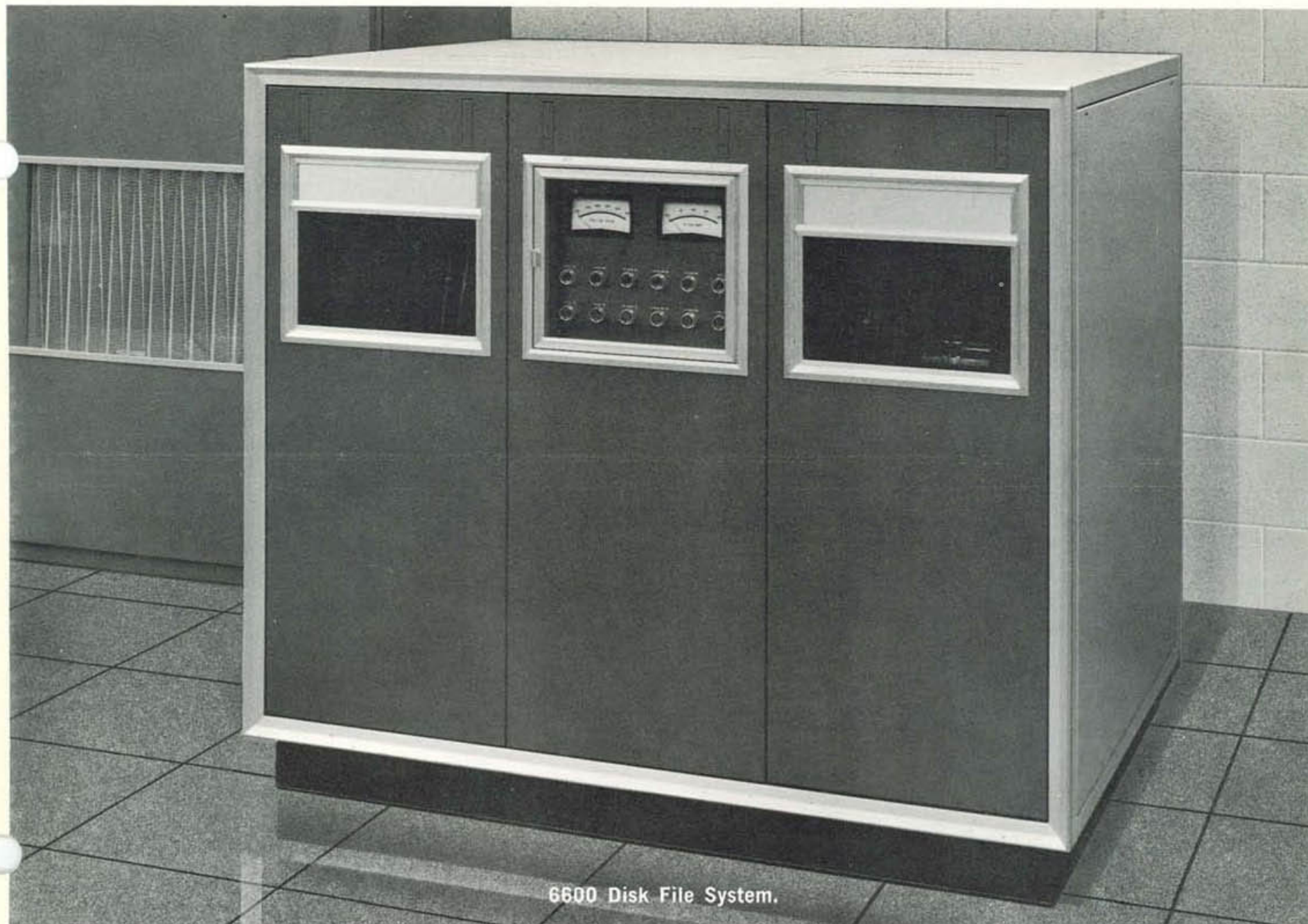






One of the memory system modules used in the 6600 (actual size).

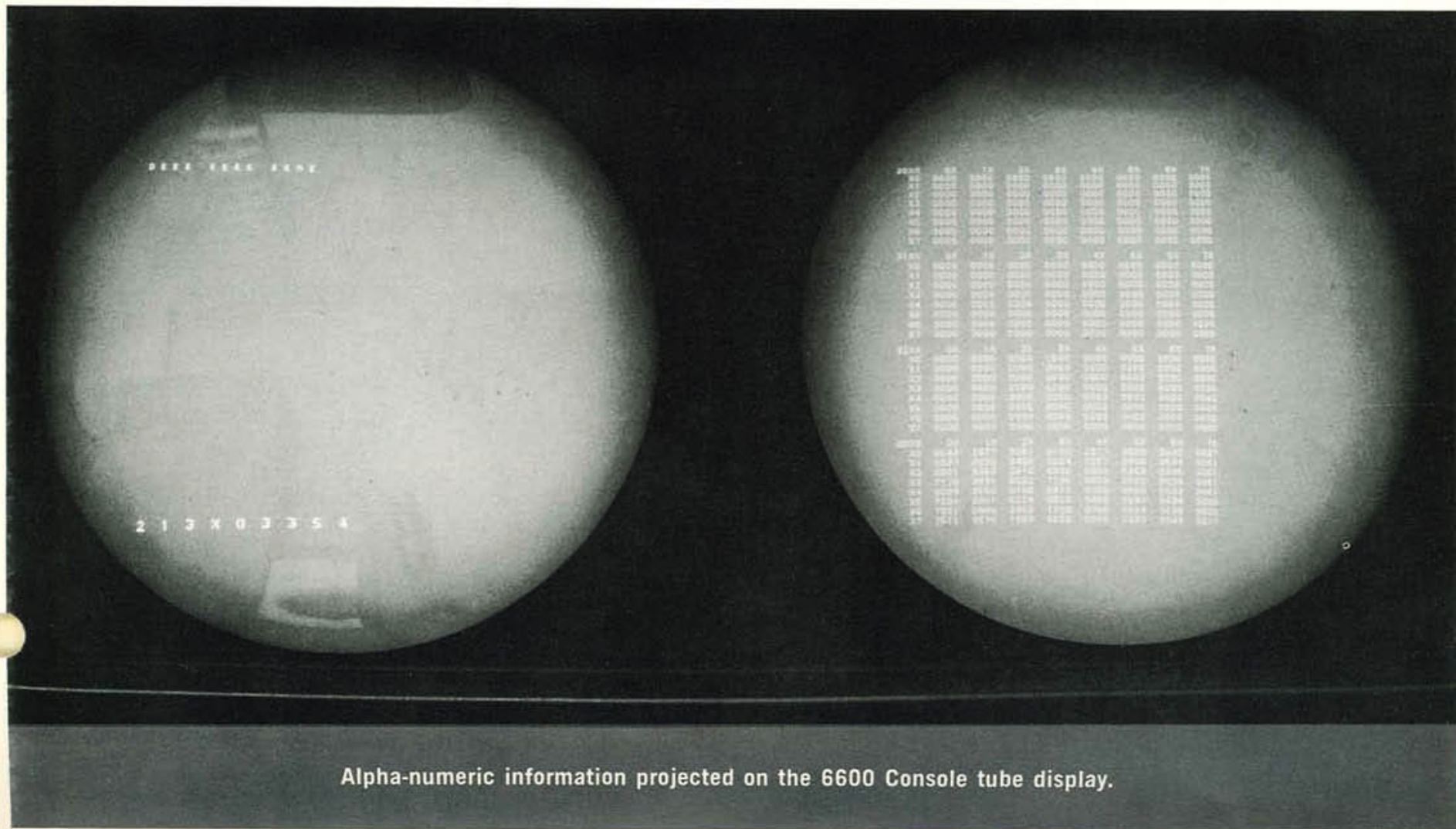
Size 7" x 7" x 4" (approx 18 x 18 x 10 cm) with the face and rear plates made of 1/4 inch steel. Each such module contained 4096 words of 12 bits



6600 Disk File System.

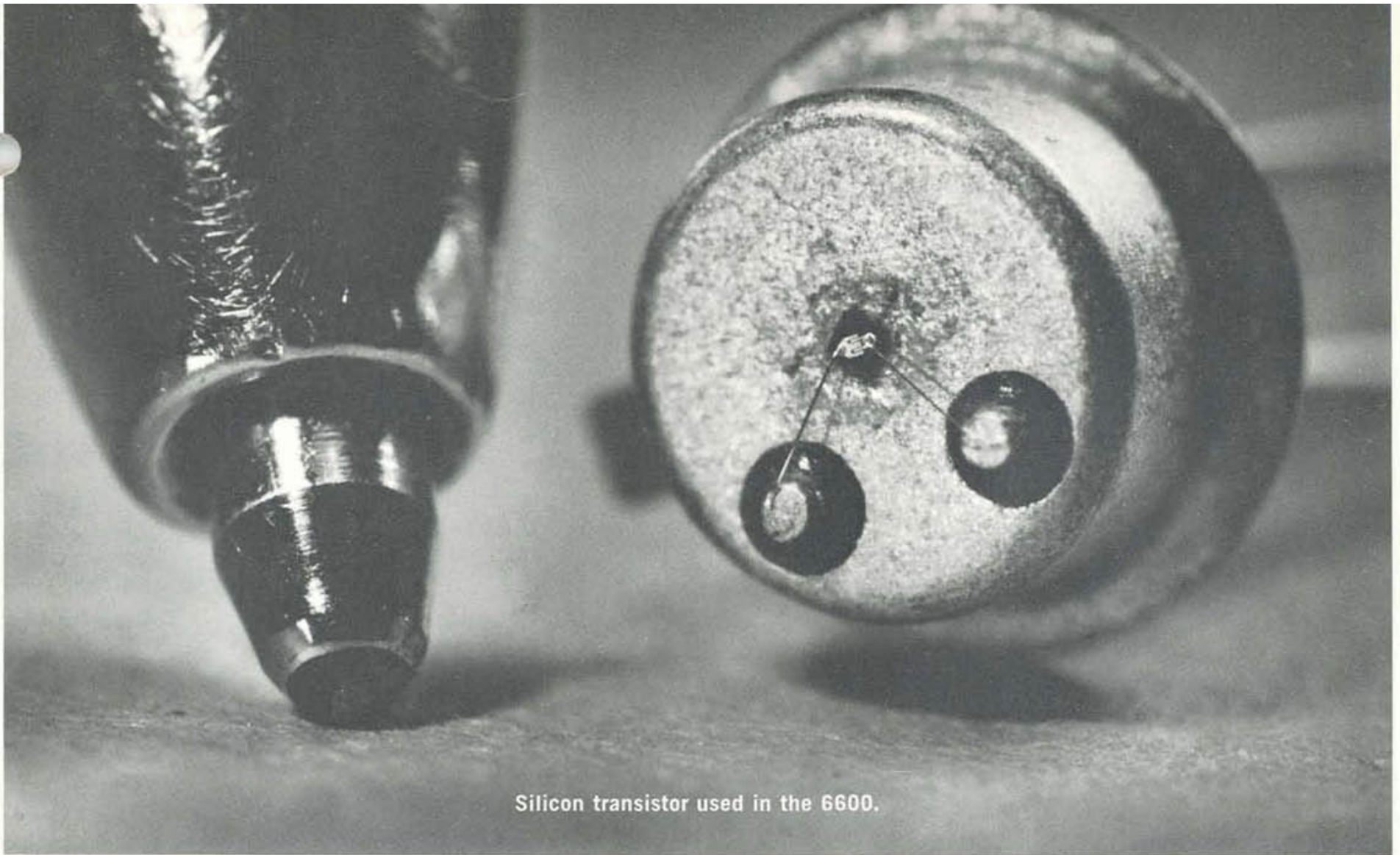


Storage capacity 37,588,992 12-bit words (approx 56 Mbytes in today's terms) spread over 12 surfaces on 7 disks (1 spare). Each disk 1 meter in diameter.



Alpha-numeric information projected on the 6600 Console tube display.



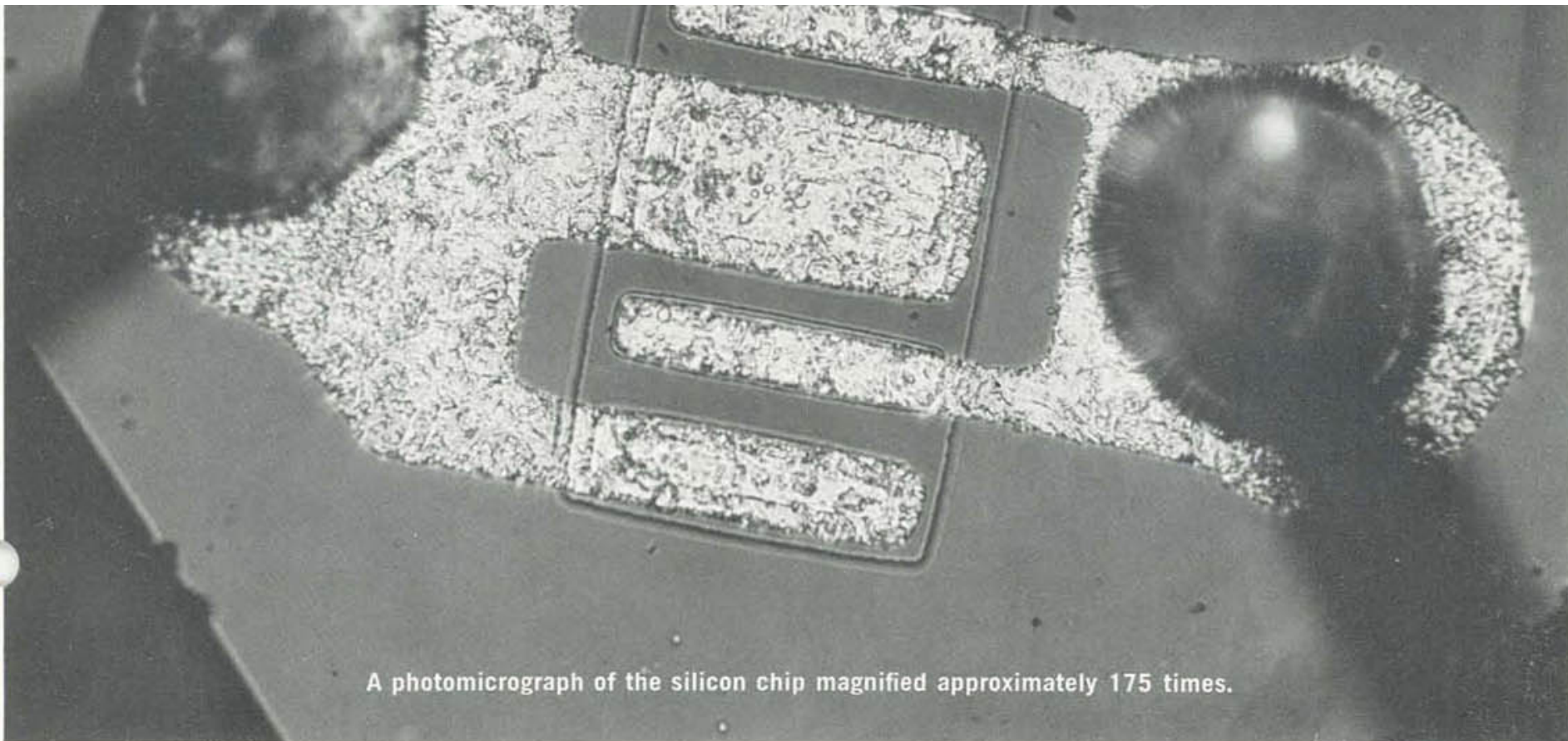


Silicon transistor used in the 6600.

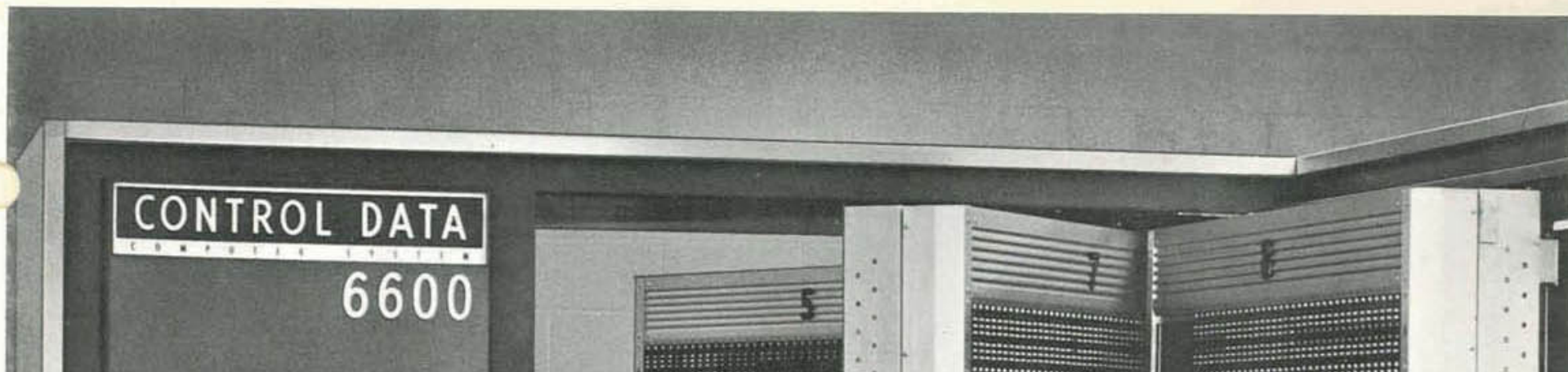
Irchild Semiconductor Div.



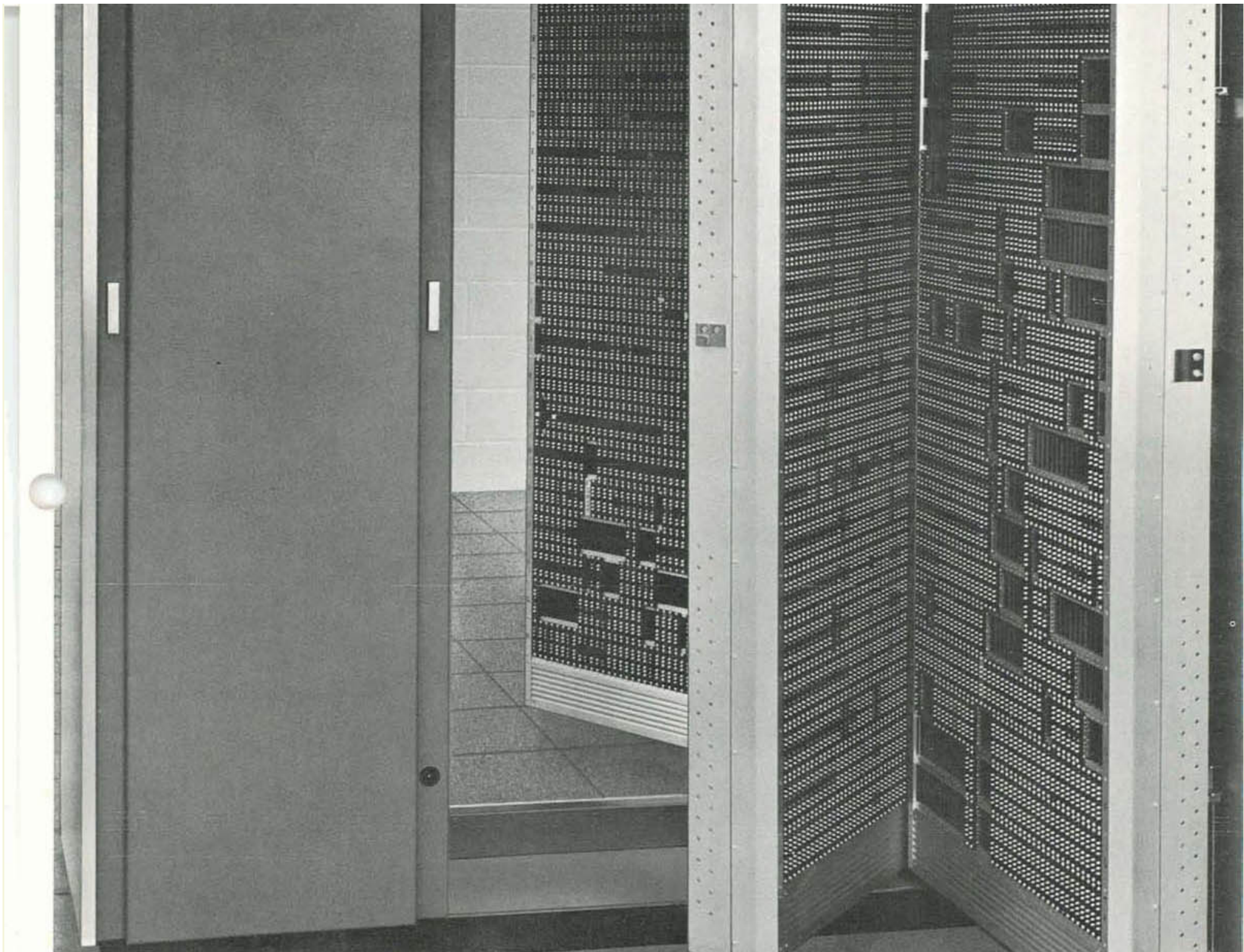




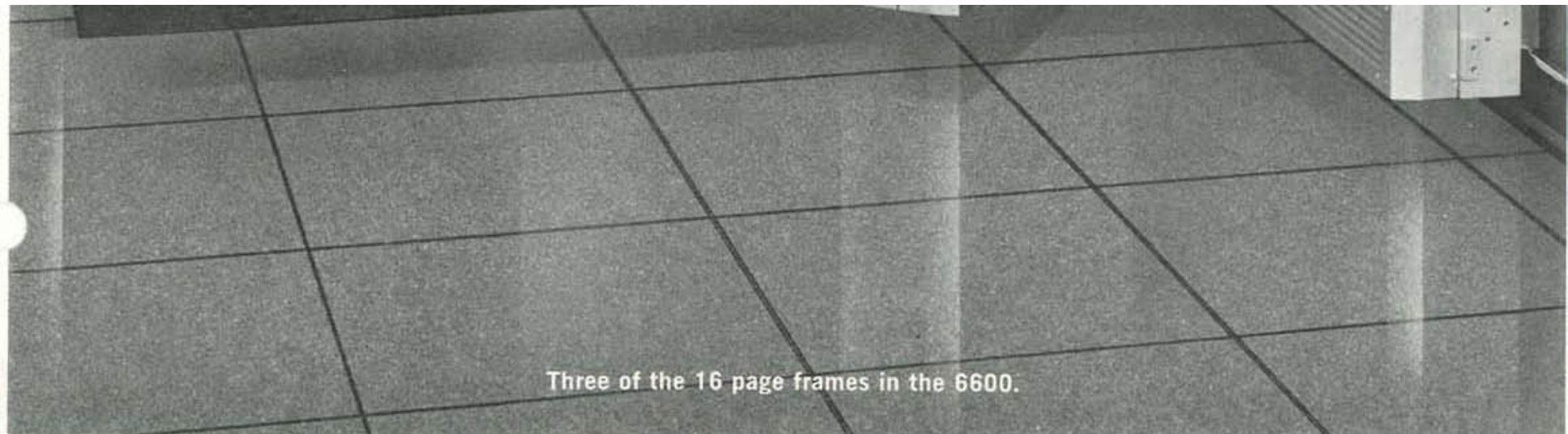
A photomicrograph of the silicon chip magnified approximately 175 times.







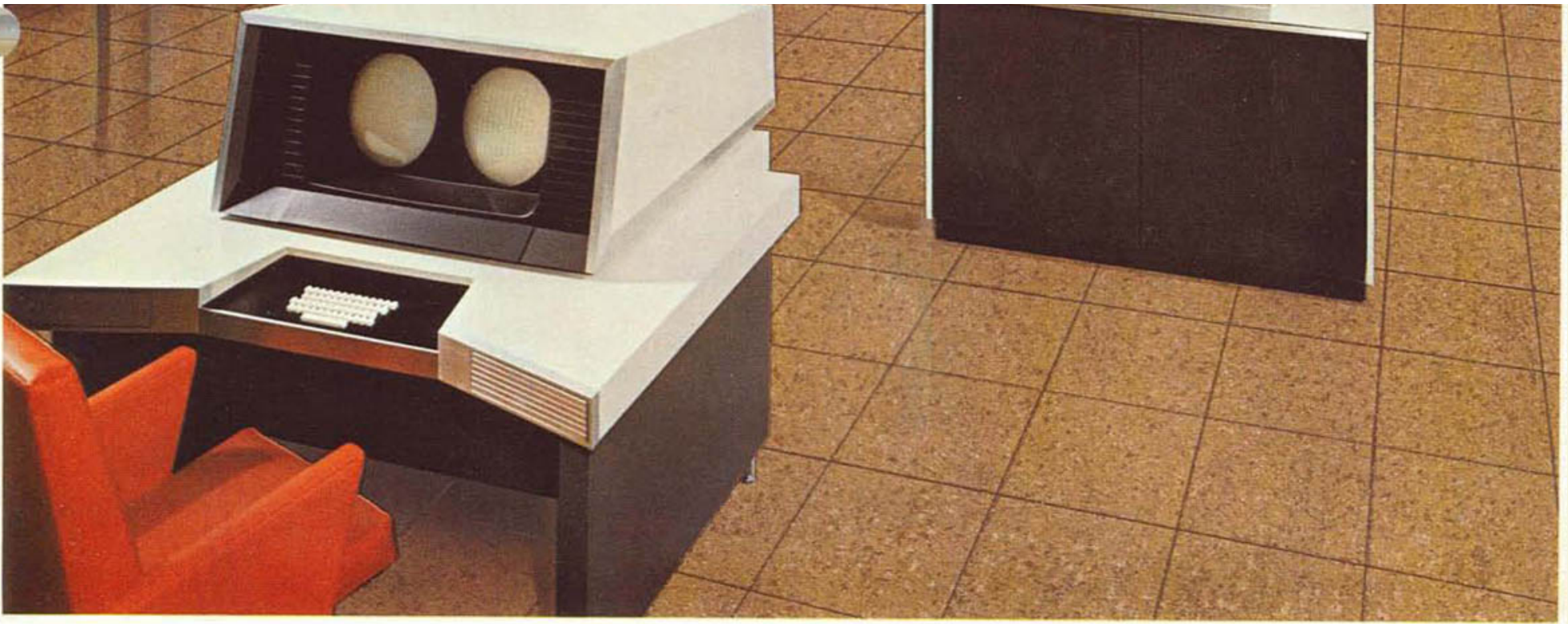




Three of the 16 page frames in the 6600.







The CONTROL DATA 6600 Computer System

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