MAGNETIC TAPE SYSTEM
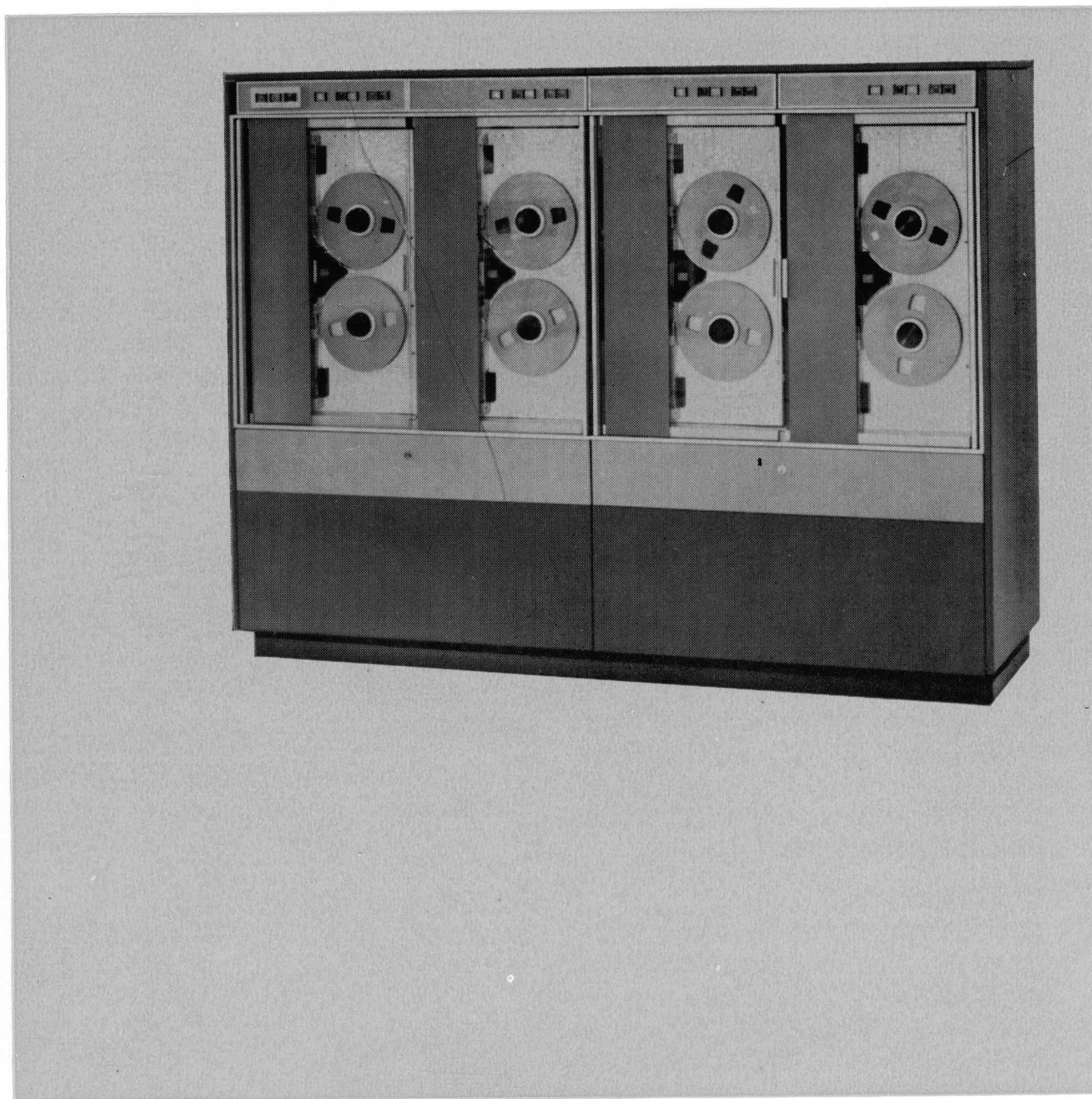## 1973

DESCRIPTION

Magnetic tape units type 1973 may be specified to include two, four or six decks, with associated control circuits for the group. Each group is connected to the Central Processor via I.C.T Standard Interface. Groups may be extended on site.

The system uses seven track, half-inch wide tape to international standards including the European Computer Manufacturers' Association. The form is compatible with that of most other modern computers.

- ■ Choice of transfer rates—15, 41.7 or 60 k ch/s
- ■ Groups of two, four or six decks
- ■ Groups connected to Central Processor via I.C.T Standard Interface
- ■ Tape and reel compatible with international systems

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1973

Recording
Standard 2,400 feet reels of tape are employed and recording is at a packing density of either 200, 556 or 800 bits to the inch. The density is selectable by program.

The tape feed speed is 75 inches a second and at the different densities give data transfer rates of 15,000, 41,700 or 60,000 characters a second. Newly written characters are read back into the control unit where they are checked for the chosen parity, odd or even. During a reading operation an automatic parity check is carried out on each character and a longitudinal check on a parity character written at the end of each block. Checks are also carried out on signal amplitude and timing during check reading at the level specified in the ECMA standard. A write or erase instruction will be rejected unless a 'write-permit' ring is fitted to the relevant tape spool.

Functions
The following tape functions are available to the programmer:
    Read forward
    Write
    Write tape mark
    Skip forward to tape mark
    Backspace
    Rewind
One read or write operation may be in progress at any one time on a single deck of a group. However rewind may take place on other decks concurrently.

Operation
Tape loading is a straighforward simple operation which is facilitated by illuminated indicator signals and operator controlled switches.

Reel Identification System
The first block of recorded information on any tape reel utilized in the system is normally a label block. A program uses a special instruction to request a tape reel. It calls for an input reel by the file name and reel number which appear in the label block. The Executive program will determine which deck contains the required reel and will then allocate that deck to the program. When a program calls for a reel to receive output, Executive finds an unallocated deck on which is mounted a reel with a write-permit ring. Provided that the validity date in the label does not indicate that the reel contains information which must be preserved, Executive writes on the reel the new label specified by the program and allocates the deck to the program. Thus the operator can mount reels on any convenient deck in anticipation of their being required. The operator is notified if an input or output reel is not available when requested by a program.

Error Recovery
If a parity error occurs during a reading operation Executive automatically attempts to repeat the operation up to a predetermined number of times before requesting operator attention. If a check-read parity error occurs during a writing operation Executive arranges that the faulty block is erased and is rewritten correctly a few inches further along the tape.

SPECIFICATION

Transfer rate 15,000, 41,700 or 60,000 characters a second
Packing density 200, 556 or 800 bits per inch
Tape speed 75 inches a second
Rewind time Less than four minutes
Reel dimensions $10\frac{1}{2}$ inches outside diameter, 3.7 inches centre hole diameter, 0.9 inches depth
Tape dimensions 2,400 feet length; $\frac{1}{2}$ inch width; 0.0015 inch thickness
Interblock gap 0.75 inches nominal
Distance between heads 0.15 inches
Gap times (reading and writing)
    Short 9.3 milli-seconds
    Long 13.0 milli-seconds

PHYSICAL CHARACTERISTICS
Unit dimensions, including control electronics

	Height	Depth	Length
Two deck	66″	30″	64″
Four deck	66″	30″	85″
Six deck	66″	30″	127″

This specification is subject to modification