

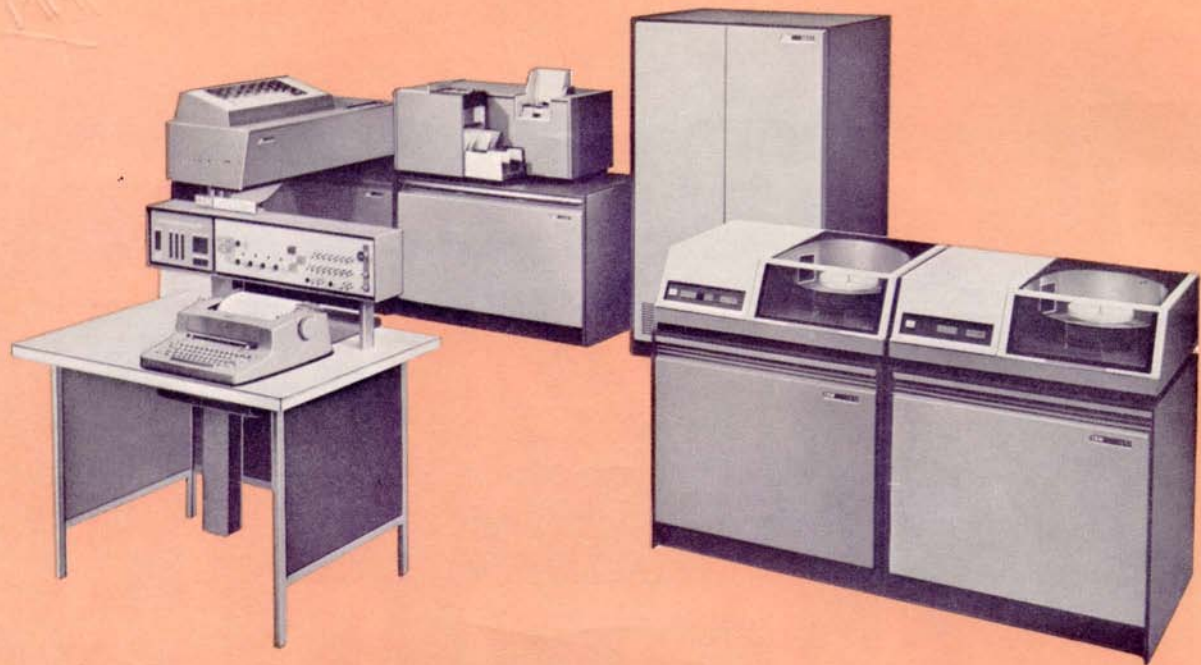
Customer  
Engineering

introduction to . . . .

MM

# 1440

IBM 1440 Data Processing System



## System Features

The IBM 1440 Data Processing System joins the popular IBM 1400 Series to provide a lower cost stored program system with disk storage capabilities. Major system components include the IBM 1441 Processing Unit, 1442 Card Read-Punch, 1443 Printer, 1447 Console, and 1311 Disk Storage Drive.

The IBM 1441 Processing Unit, with either four, eight, twelve, or sixteen thousand positions of core storage, has a memory cycle time of 11.1 microseconds. Indexing and store register, and expanded print edit are available.

The IBM 1442 Card Read-Punch is a serial machine. Two models are available for either 300 or 400 cards-per-minute reading. After passing through the read station, the card registers at the punch station. Punching speed depends on the number of columns punched. If no punching is to take place, or if punching is complete for this card, the card may be ejected into the stacker. An additional stacker allows card selection.

The IBM 1443 Printer uses a single horizontal typebar for printing. The optional selective character set feature provides three additional typebars, which are *operator-interchangeable*. The standard typebar prints 52 different

characters, while the selective character set typebars print 13, 39, and 63 different characters. Either 120 or 144 printing positions are available. Printing speeds vary from 430 lines per minute when using the 13-character typebar, to 120 lines per minute when using the 63-character typebar. Special print storage increases over-all system through-put.

The IBM 1447 Console contains the operating switches, lights, and keys for the system. Display lights show the status of various registers. The special console input-output printer feature is under program control to provide inquiry functions.

The IBM 1311 Disk Storage Drive provides random and sequential processing abilities. Data is stored on a disk pack, comprised of six 14-inch disks. The two-million character disk pack may be removed as a unit and replaced with another pack *by the operator*. The read-write heads are contained in a comb-type access mechanism that is positioned hydraulically to any one of 100 cylinders within the disk pack. Access time averages 250 milliseconds. At each cylinder location 20,000 characters are available to the processor.

## CE Features

### *General*

- all features can be field installed
- improved circuitry eliminates close-timing conditions
- single level logic permits simplified signal generation
- relays have been eliminated from all circuits except the power sequencing circuits
- single-card programs are provided with the system sequence charts
- indicators display status of major system latches and triggers
- system console lamp test facility

### *IBM 1441 Processing Unit*

- simplified core-storage logic (no switch cores)
- general design philosophy is similar to previous IBM 1400 Series systems
- frame/gate packaging improves serviceability
- error recycle and clock stop circuitry
- portable start key for remote system control

### *IBM 1442 Card Read-Punch*

- cards are punched serially, which allows programming of single punch cycles for trouble analysis
- positive punch checking is provided by sensing the

actual movement of the punches

- read brushes are replaced by solar cells
- solar-cell emitter and magnetic circuit breakers replace their mechanical counterparts

### *IBM 1443 Printer*

- a magnetic emitter and solar cells provide typebar control and print timings
- simplified magnetic clutches are used exclusively
- special print-storage unit is completely pluggable

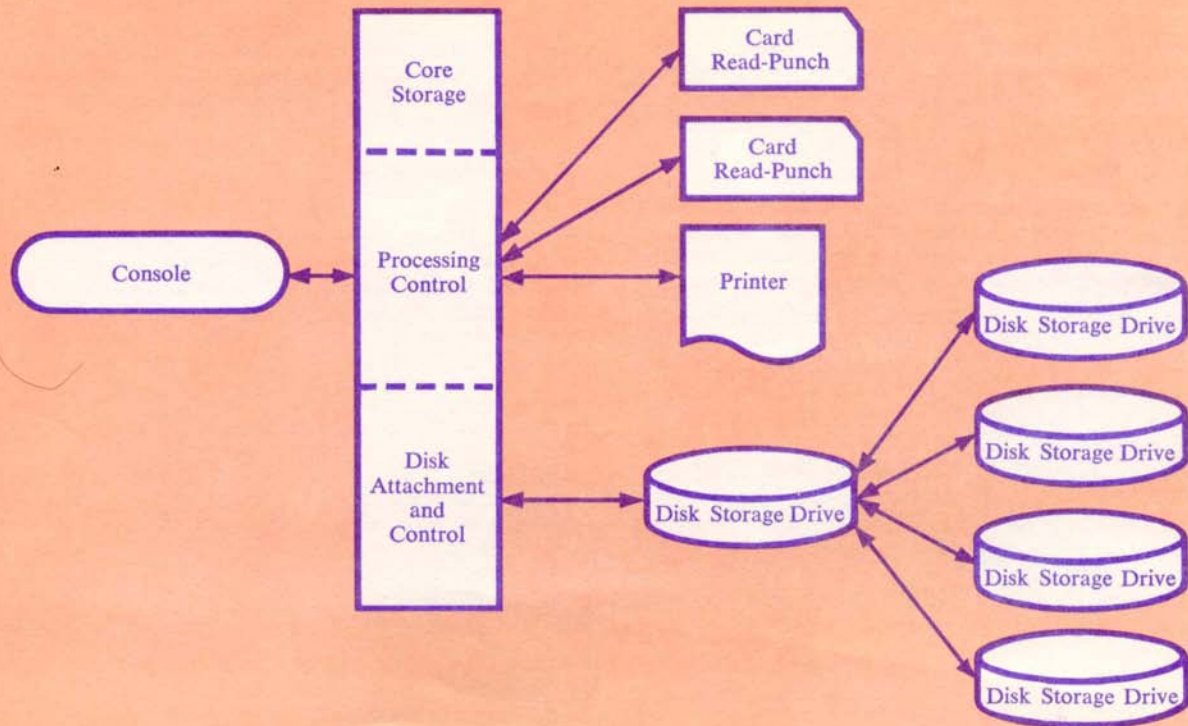
### *IBM 1447 Console*

- contains system operating keys, lights, and switches
- special console I/O printer feature provides inquiry functions
- data may be entered or altered from the console I/O printer

### *IBM 1311 Disk Storage Drive*

- separate CE disk pack for maintenance
- diagnostic aid switch for locating errors
- solar-cell emitter controls access-arm position

## System Data Flow





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