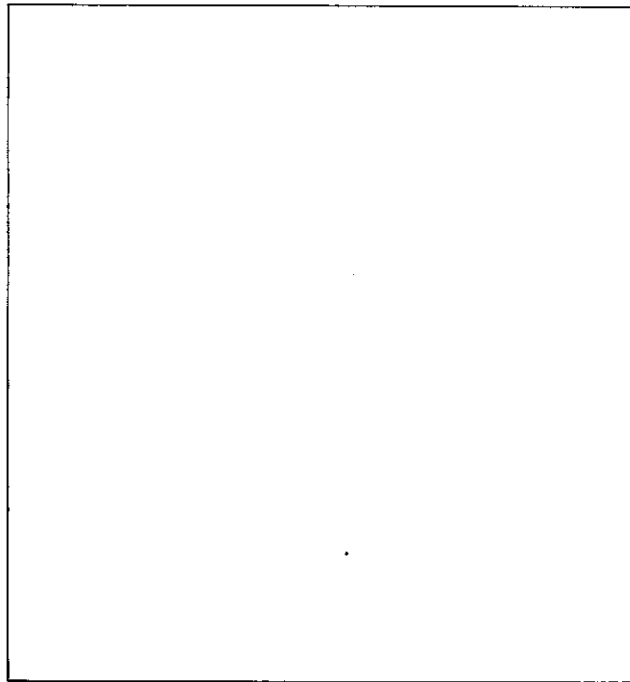




System 45



HEWLETT  PACKARD

System 45 gives you powerful problem-solving capability, plus.

The solution. System 45 introduces an advanced class of desktop computers with increased performance for easy solutions. Its innovative system architecture blends the essential elements of computing into a single, compact package. The combined, interactive capabilities of these elements — when joined with the user's professional skills — provide the quickest, most complete solutions to problems. Easily programmed and software supported (utility library to selected application programs), System 45 leaves dedicated computing where it belongs, in the individual's work area. Finally, this solution provides built-in reliability and the ready support of an established service organization.

Versatility. This integrated system brings versatility to personal computing whether a job demands graphic displays, the ability to scan and modify existing files, or high-speed mass storage. Simple graphs and 2-dimensional displays serve merely as indicators of the system's flexibility. It can be used as a problem solver, design tool, management aid or computing controller in an instrument system. So, System 45 gives the scientist, designer, statistician, engineer and/or manager the flexible computing system necessary to handle each need as it arises.

The power you need. With this system, gone are the limitations imposed by smaller (though accessible)

computing devices that cannot handle the load. Power means many things. It can be a language capable of handling the most complex application with a minimum of statements. Or enough memory to handle lengthy, involved routines. It may include adequate mass storage capability or the ability to directly interface with and control external devices. Whether thinking in these terms or talking throughput or benchmarks, System 45 now offers the power to meet most needs while remaining at the individual's disposal.

Ease of use. Friendliness has been stressed throughout the design of System 45. The pieces necessary to do a complete job — simply, easily — are neatly packaged into a single compact unit. And they interact with each other to provide the greatest capability for the least amount of effort.

Friendly means being able to talk with the computer without extensive, time consuming training. Individual needs can be met via user-customized routines, eliminating waiting for an expert to get the job done. Special Function keys can also ease the task of getting a job done by allowing interrupts that branch operation to user-designated subprograms. And, of course, System 45 is there when needed. That's friendly!

And to get all that, you need these:

- Operating system
- Display device (CRT)
- Input device (keyboard)
- Large user memory
- Mass storage
- Advanced language
- Special function ROMs
- Output device (printer)

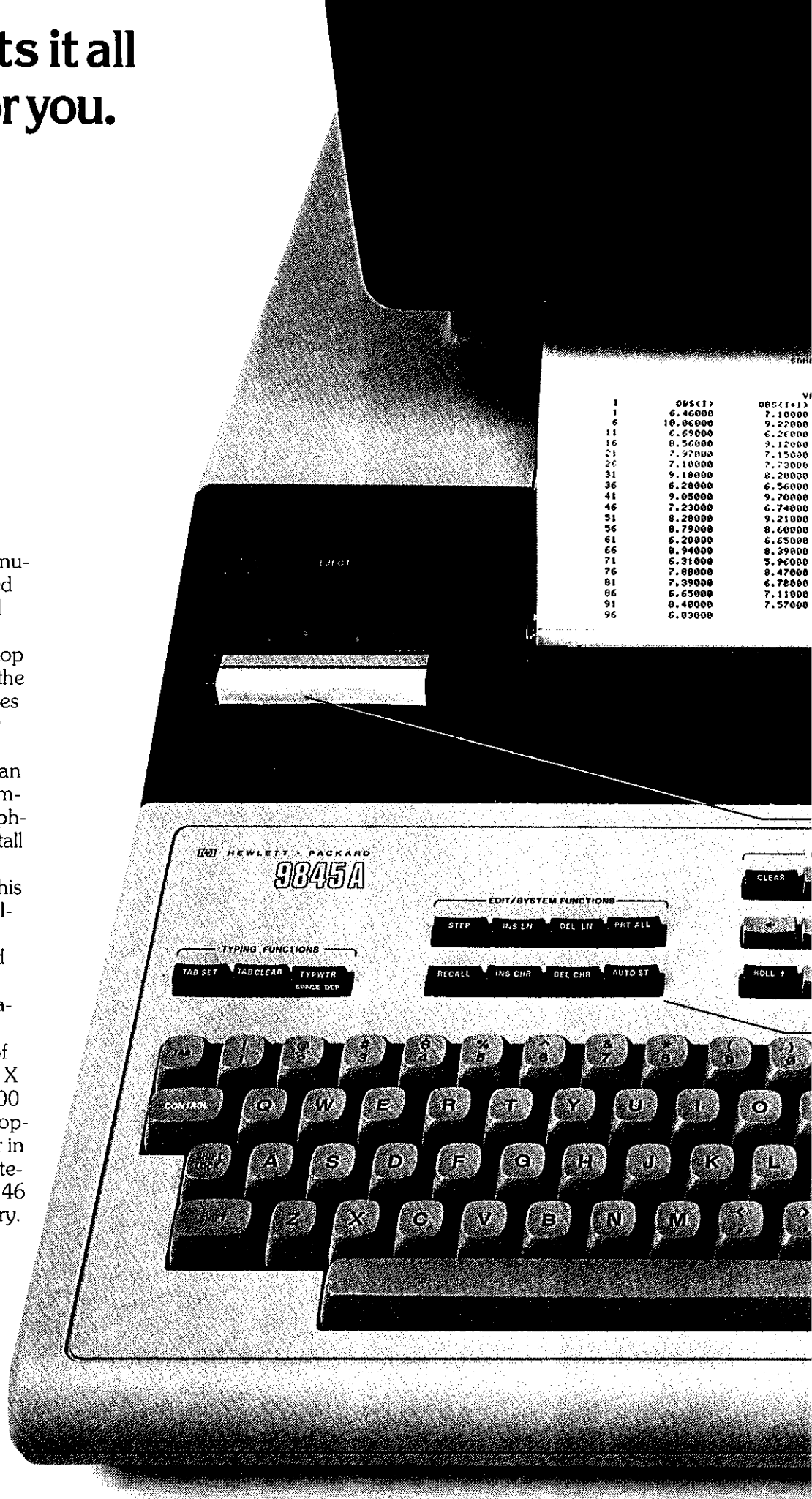


System 45 puts it all together for you.

System 45 is not just another computer. It evolved from a continuing research program and is based on proven technology developed over the years since Hewlett-Packard first introduced the desktop computer. The System 45 — as the newest member of the 9800 Series desktop computers — sets a new standard in personal computing.

In a package weighing less than 75 pounds, you get extensive computing power and necessary peripherals. Standing 470 mm (19 in.) tall and measuring 483 mm (19 in.) wide by 667 mm (26 in.) deep, this dedicated system fits easily into almost any work area. It plugs into standard convenience outlets and requires no special environment such as rigidly controlled temperatures or air filtering.

Using an expanded version of BASIC, this system handles a 50 X 50 element matrix inversion in 200 seconds or executes an addition operation on a full precision number in 220 μ seconds, both with one statement. And you can select 13, 29, 46 or 62k bytes of read/write memory. Each tape cartridge unit provides 217k bytes of mass storage.



	085(1)	085(1+1)
1	6.46000	7.10000
6	10.06000	9.22000
11	2.59000	6.24000
16	8.56000	9.12000
21	7.97000	7.15000
26	7.10000	7.73000
31	9.18000	8.20000
36	6.28000	6.56000
41	9.05000	9.70000
46	7.23000	6.74000
51	8.28000	9.21000
56	8.79000	8.60000
61	6.20000	6.65000
66	8.94000	8.39000
71	6.31000	5.96000
76	7.88000	8.47000
81	7.39000	6.78000
86	6.65000	7.11000
91	8.48000	7.57000
96	6.83000	

MODEL # 85

LE # 1

DB6(1+2)	DB6(1+3)	DB6(1+4)
7.90000	8.75000	9.42000
8.14000	8.06000	7.25000
6.45000	6.93000	7.08000
9.71000	9.12000	8.24000
6.64000	6.25000	6.48000
6.63000	9.18000	9.85000
8.00000	7.18000	6.72000
7.09000	7.63000	8.47000
9.12000	8.12000	7.95000
6.95000	7.09000	7.67000
9.81000	10.51000	9.77000
7.77000	7.30000	6.88000
7.26000	7.91000	8.41000
7.63000	7.37000	6.70000
6.16000	6.69000	7.16000
8.90000	8.40000	7.59000
6.38000	5.98000	6.17000
7.83000	8.35000	8.89000
7.95000	6.71000	6.32000

TOP OF FORM PAPER ADVANCE



- Four Input/Output Slots
- 12-Inch Diagonal CRT
- ROMs and Operating System
- 80-Column Thermal Line Printer (Optional)
- 217k-Byte Tape Cartridge
- 217k-Byte Tape Cartridge (Optional)
- Special Function Keys
- CRT/Edit Control Keys
- Program Control and Editing Keys
- Upper and Lower Case Alphanumeric Keyboard

The integrated system architecture gives you maximum performance.

Putting the pieces together.

The genius of the System 45 lies in its integrating a powerful computing device into a common package with the most needed peripherals. Compact and cost effective, it retains many of the advantages normally found only in larger, more expensive systems.

Take for example, the 12 inch (diagonal) CRT that rests so conveniently atop the system. It produces an 80-character wide, 24-line display that allows you to view and work with large data or program segments. The raster scan implementation allows you to move the cursor, scroll through text and see corrections inserted as you make them. And the standard display includes such refinements as high-speed listing and upper and lower case characters. As a major highlight, System 45 offers an extremely useful, interactive graphics display option.

The keyboard provides alphanumeric, control, editing and Special Function keys. It is used to enter data of programs into the system and interacts directly with the CRT. This interaction allows you to directly alter or manipulate the displayed information.

Anytime you want hard-copy printouts, the optional (but built-in) thermal line printer will output them on command. It produces little noise

distraction, even in an office environment. Yet it prints up to 480 lines per minute.

An important and unique feature of this new printer is its ability to copy formatted information from the CRT. In the graphics mode, you simply type DUMP GRAPHICS and the CRT image transfers directly to the printer. And the printer provides quality printing with standard ASCII upper and lower case characters. It also handles both black perforated and blue continuous roll papers in English and metric sizes.

The tape transport units built into the System 45 provide a mass storage capability of 217k bytes/cartridge. And their high-speed operation allows faster throughput.

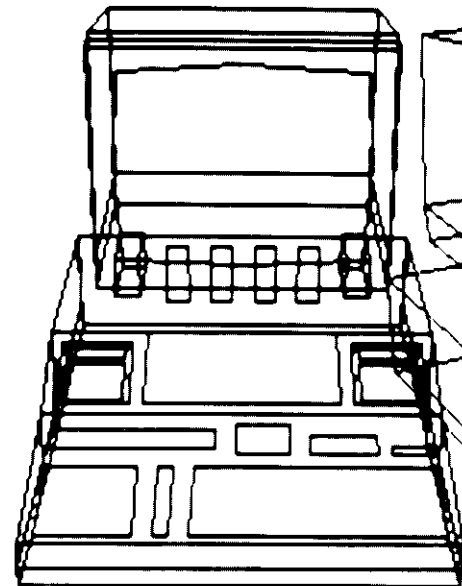
Yes, this system very neatly integrates computing power and peripherals into a single unit. You get increased performance and benefits because the components work as a team. System 45 puts the power at your disposal to do the job — your way — on a moment's notice.

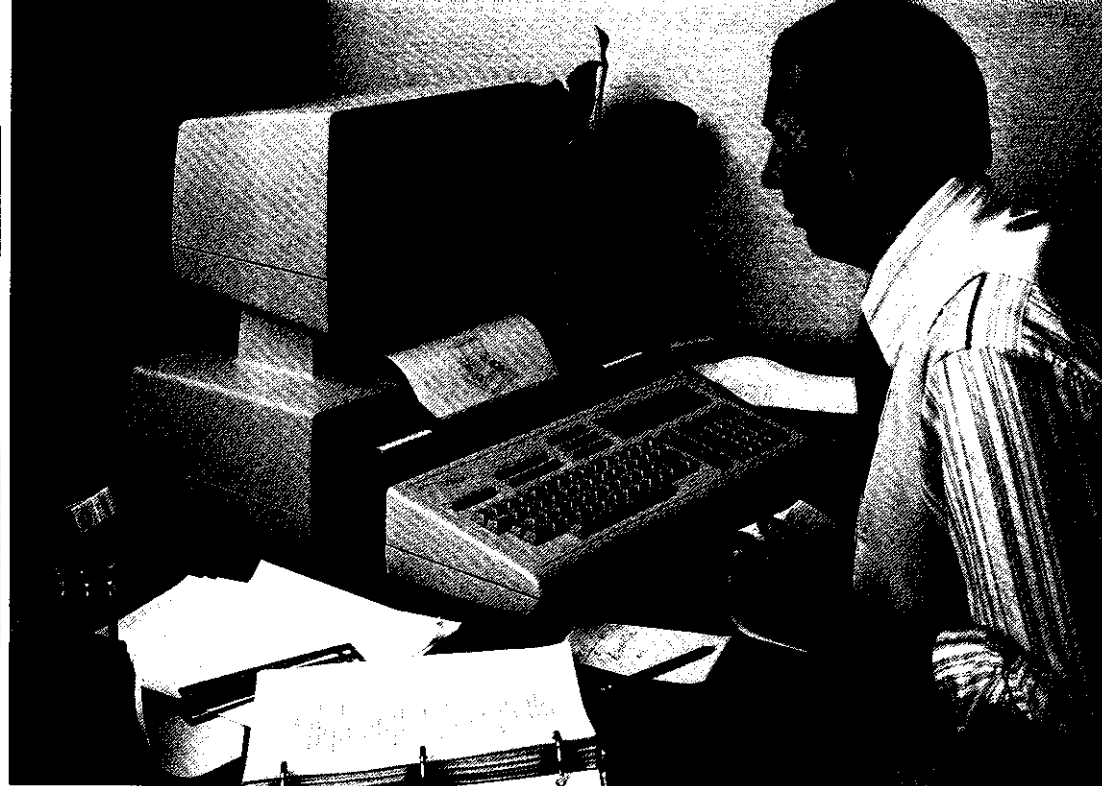
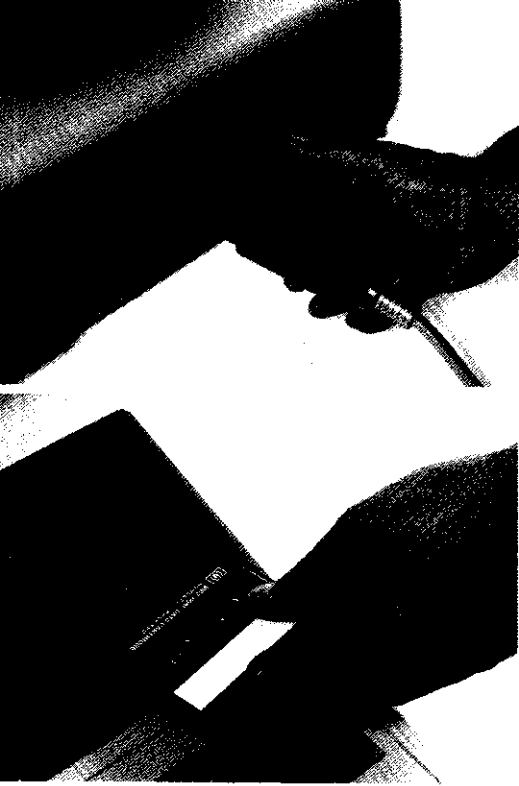
Growing with graphics. With the graphics option, plotted data becomes visible practically as fast as it is generated — anytime. This allows you to easily identify trends in a timely fashion and, even better, the interactive graphics let you make changes to the display.

You can add to and remove portions of the image without erasing the entire display. Thus you work with a continuous, uninterrupted display until the desired result is achieved; then you transfer that image to the printer for a dot-for-dot copy. Or, if you need copies that approach draftsman quality, simply attach the 4-color 9872A Plotter. It requires no additional formatting.

The high-level graphics language simplifies drawing axes, plotting data or manipulating scale factors. To get your job completed, System 45 with the graphics option could prove a very valuable asset.

Controlling mass storage. The Unified Mass Storage Command





Structure is a feature conceived to make using mass storage devices (tape transport, flexible disk and large disc) easy. You assign meaningful, mnemonic names to files (up to 6 characters) and the system maintains a directory of all the stored files by name.

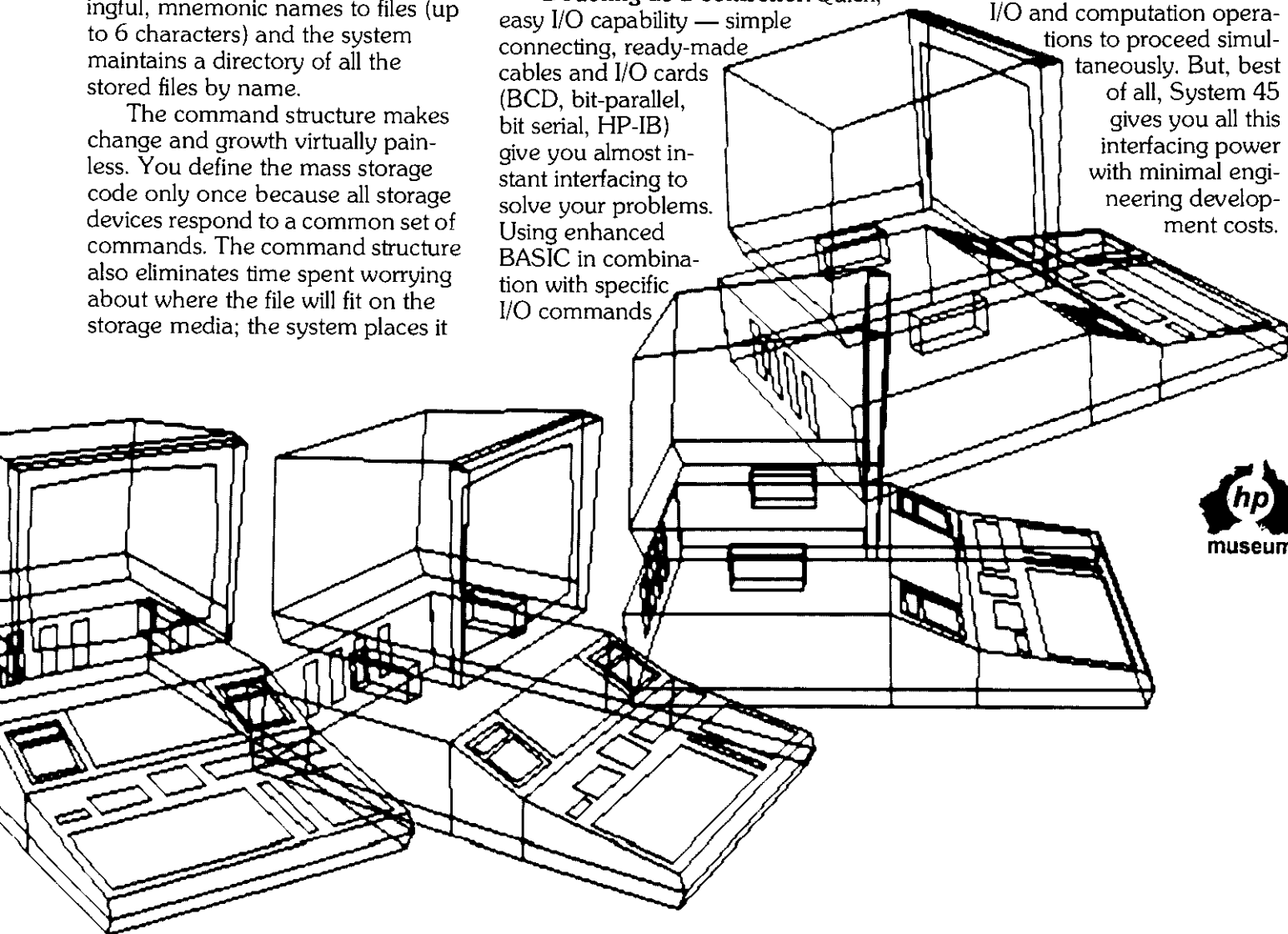
The command structure makes change and growth virtually painless. You define the mass storage code only once because all storage devices respond to a common set of commands. The command structure also eliminates time spent worrying about where the file will fit on the storage media; the system places it

automatically. Finally, it provides for programmable verification of the data being written.

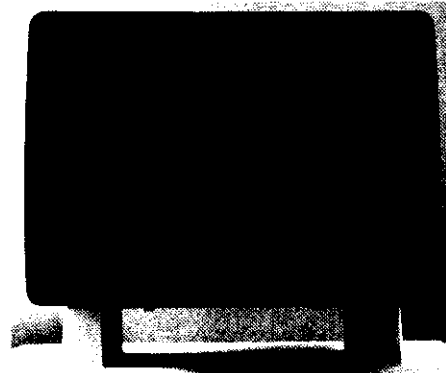
Doubling as a controller. Quick, easy I/O capability — simple connecting, ready-made cables and I/O cards (BCD, bit-parallel, bit serial, HP-IB) give you almost instant interfacing to solve your problems. Using enhanced BASIC in combination with specific I/O commands

to write application programs also eases the task of installing this controller in your system. And overlapped processing allows independent

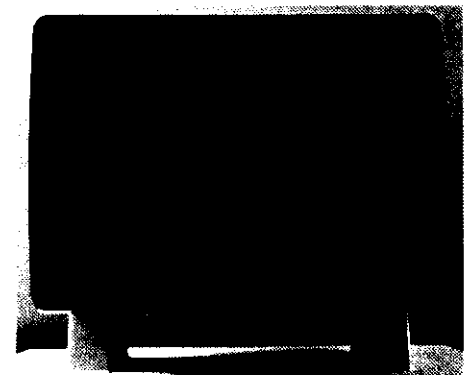
I/O and computation operations to proceed simultaneously. But, best of all, System 45 gives you all this interfacing power with minimal engineering development costs.



System 45: hardware and software to fit today's applications.



System 45 offers almost unlimited application possibilities. Such standard uses as report generation or record keeping are only two of many possible management applications. But the three areas where this system will prove especially valuable to you are engineering design, scientific computation and data analysis, and data acquisition and control. And each of these applications will be supported by a utility library and selected programs.



— Numeric Arrays

These array and matrix operations expand the mathematical operations performed on numerical data matrices.

— String Arrays

The string array feature increases the friendliness and power of the language by providing efficient, easy to use operations to manipulate non-numeric data.

— If-Then Statement

On the same line as the IF-THEN, you can include any executable BASIC statement, thus minimizing conditional branch coding.

— On-Key Interrupts

User defined keys allow the operator to interrupt an active program to run a higher priority sub-program — or simply to print the status of the operation — with a single keystroke.

— Print Using Statement

Used for formatting output routines to printers.

Engineering design. No matter what the design problem (electrical, mechanical, etc.), immediate access to a computing system can prove your greatest asset. With the System 45, you get an easily programmed, complete design station right at your desk where the need exists. And, in addition to powerful analytical capabilities, its interactive graphics option allows you to manipulate the display or algorithm until you achieve the desired result.

Scientific computation and data analysis. While working toward an optimum solution, System 45 allows you to view and modify results as you go. Having it in your work area means you can take the time to investigate alternative solutions (whether working with data characterizations, analyses of variance, regression analyses, etc.). The large internal memory and powerful language allow the computer to handle complex routines. And yet

the conversational nature of the language encourages you to develop personalized routines to meet specific needs.

Data acquisition and control. System 45 offers a powerful, immediate and simple answer for your computing-controller needs. For example, the friendly language and four ready-made interfaces to this self-contained computing system eliminate high development costs and schedule delays. It interfaces directly with your instrumentation. A useful I/O feature designed into the system is overlapped processing which allows you to continue I/O operations while computational routines are being run. And the CRT allows you to instantly and continually view raw data and intermediate results without wasting paper.

Hewlett-Packard allows you to plan for tomorrow.

An expandable system. The computing system you select must be adaptable, not just to meet your needs today but your needs in the future. To provide that potential, Hewlett-Packard offers you an extensive line of peripherals. Flexible disks, large fixed discs, printers, plotters and more — with such a wide selection of System 45-compatible devices, you can configure a system to meet your every need. And, best of all, the Mass Storage Command Structure eliminates costly program conversions should your increasing needs dictate a change in system configuration.

In addition, Hewlett-Packard is committed to a continuum that will allow growth — throughout its computer product line — with a minimum of growth-related pains. The System 45 is one of the computers included in that continuum.

The service you deserve. Before it ever reached production, the System 45 had undergone over 5 000 hours hardware and 2 000 hours firmware testing — just one example of how Hewlett-Packard builds quality into the product. In addition, skilled personnel build it to exacting standards that are closely monitored by rigid quality control checks. As a final commitment to serving you, Hewlett-Packard's worldwide service organization has completed detailed maintenance

and repair training on the System 45. Our goal is to provide System 45 service with minimal inconvenience and down time for you.

The next step. To fully appreciate and evaluate the System 45, you need the opportunity to see it in action. To arrange a demonstration or for more details, call your local Hewlett-Packard sales office today.





Specifications...

Typical System

Height 469.9 mm
(18.5 in.)
Width 482.6 mm
(19.0 in.)
Depth 666.8 mm
(26.3 in.)
Net weight 35.1 kg
(77.5 lb)
Power 110V or 220 V;
48-66 Hz
Read/write memory
Standard . . . 13 498 bytes
Optional . . . 29 882 or
46 266 or
62 650 bytes

Thermal Printer

Print speed 480 lines/min.
(maximum)
Line width 80 characters
Noise level 65 dba

Tape Cartridge

Access File-by-name
directory
Capacity 217 000 bytes
Search speed . . 2 286 mm
(90 in.)/sec
Rewind time . . . 19 sec
(end-to-end)

CRT

Screen size 12 in. diagonal
Brightness 25-40 ft-lamberts
(adjustable)
Refresh rate . . . 60 Hz

Alpha display

Screen
capacity 24 lines,
80 characters/line
Raster scan
size 236 x 122.9 mm
(9.3 x 4.8 in.)
Character
set 128 ASCII
(standard)
Cursor Blinking underline
Highlighting . . . Inverse video,
blinking and
underline

Graphics option

Raster scan
size 560 x 455 dots
(with 0.013 in.
dot spacing)
Cursor
Plot mode full screen or
blinking crosshair
Letter mode . . . blinking underline
Writing speed . . . 3 810 mm
(150 in.)/sec



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