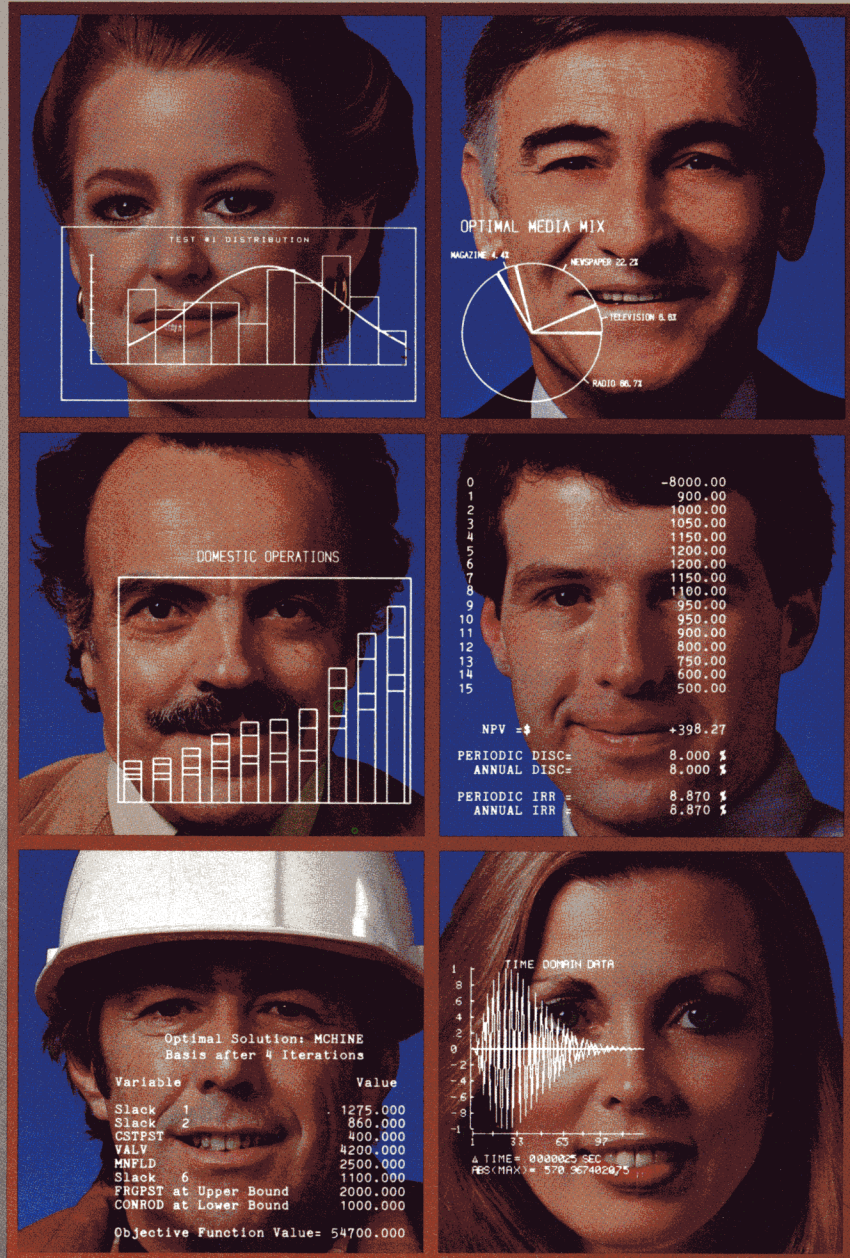


Series 80 Personal Computer Software

Ready answers to challenging problems



Introduction: Software And Solutions

When you purchase a Series 80 Personal Computer, you've acquired a product that's powerful, versatile, and built to exacting quality and performance standards. And, you've got half of the solutions to the problems you want your personal computer to solve.

Software is the other half. It's the source of the solutions that will aid you in decision making, improve your day-to-day effectiveness, save you time, and enhance your work performance.

Whether you need your computer for science, engineering, or management planning and analysis, Series 80 can provide the software solutions for your particular problems. From powerful analytical pacs, to the worksheet wizardry of VisiCalc® PLUS, to the wide world of CP/M® software, Hewlett-Packard is committed to bringing you the software tools that meet your computational requirements and help arrange your data in a meaningful way.

Software Sources

Series 80 software is available from several sources:

HP Software: Series 80 application pacs, written by HP software specialists expressly for Series 80 Personal Computers, offer you problem-solving tools for a broad range of fields. Analytical pacs—some of the best of their kind—facilitate statistical analysis, or solve specific problems in electrical or civil engineering. More generalized software, like VisiCalc PLUS and Graphics Presentations, can easily be adapted to

fit your particular needs. And there's HP software that will help you with information management.

All of these pacs have been subjected to our rigorous field testing and are fully supported by our software support services (see page 17).

Software Suppliers: Under the HP PLUS Retail program for software suppliers, HP arranges with independent software suppliers to develop Series 80 software and make it available to you. These firms are either specialists in a particular field or specialists in creating applications software. Many of them have subjected their products to HP's demanding "user-proven" evaluation process. Those that meet the criteria of this process and show that they have professional, well-presented products will qualify for an HP+ rating. You can buy these products knowing that they have been qualified by computer users.

For more information about HP PLUS see your dealer or consult your Series 80 Software Catalog. Look for the HP+ emblem to be sure you are buying professional, user-proven software.

Users' Library: The HP Series 80 Users' Library offers an extensive selection of programs written by owners and users of HP personal computers. As a Series 80 owner, you'll have the opportunity to join the Users' Library. Members receive the Series 80 Software Catalog (described below), as well as discounts on library programs, and access to the programming ideas of other library members.

Your HP dealer or HP representative can tell you how you can join the library.

Solution Books: These are conveniently priced and packaged collec-

tions of some easily adaptable programs from the Users' Library. Solution books give you ready-to-run applications in business, science, engineering, and education (for more information, see page 18).

Series 80 Software Catalog

The Software Catalog provides detailed information about software from all of these sources: HP, independent suppliers, Users' Library, and solution books. All HP authorized dealers and HP representatives maintain an up-to-date copy of the catalog, to make it easy for you to get more information about the hundreds of programs that have been written for Series 80 Personal Computers.

For More Information

The information in this brochure highlights the range of solutions available for your Series 80 Personal Computer. But, to fully appreciate what it can do for you, you need to see it in operation firsthand.

To get a closer look at the power and versatility of HP software, ask your local HP dealer or HP representative for more information or a demonstration.

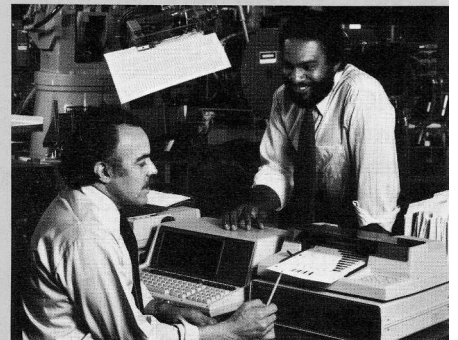
*VisiCalc® is a registered trademark of Personal Software Inc.
CP/M® is a registered trademark of Digital Research, Inc.

Table Of Contents

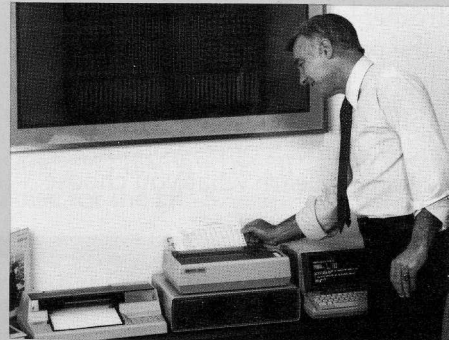
Introduction: Software and Solutions	2
Training Materials and Courses	4
Analytical Solutions: Engineering and Science	5
Analytical Solutions: Statistics	7
Graphics Presentations	8
Decision Support Software	9
VisiCalc® PLUS	10
Accounting and Information Management	12
Games	12
Data Communications	13
CP/M®	14
System Enhancements (firmware)	14
Users' Library	16
Series 80 Solution Books	16
Software Support	17
Software/Hardware Matrix	18



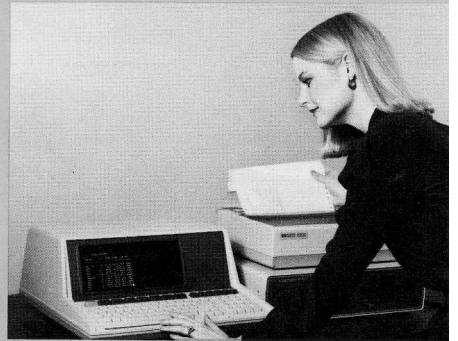
Page 5



Page 7



Page 9



Page 13

Training Materials And Courses

To help you become familiar with your Series 80 Personal Computer—or to learn more advanced programming techniques—HP offers a BASIC Training software pac and three training courses. You can choose between self-paced and classroom learning.

BASIC Training

Whether you're new to personal computing or have some background in BASIC language programming, you can use this software pac to suit your requirements.

If you're a beginner, BASIC Training starts with the fundamentals and lets you proceed at your own pace.

If you're already familiar with BASIC, but don't consider yourself a programmer (yet)—or if you'd like a refresher—you can spend time only on the parts of the pac that you need to learn.

BASIC Training is a friendly, do-it-yourself guide. It offers you the flexibility to learn what you choose

to learn. Combined with your Owner's Manual, BASIC Training gives you a complete grounding in BASIC programming, and enables you to become more familiar with your Series 80 Personal Computer. With BASIC Training, you'll learn how to:

- write your first BASIC program (with the help of nearly 70 problems and 13 tutorial programs).
- control program execution.
- plan programs and draw flowcharts—over 50 sample flowcharts are provided in the manual.
- program the computer to make decisions.

BASIC Training comes complete with an instruction manual, and a supplement with a HELP section and a dictionary of BASIC commands and statements. These three elements work hand in hand to lead you through Series 80 programming and operations.

BASIC Training (00085-13002) includes: manual, supplement, tape and 5¼" disc for the HP-85.

Training Courses

If you prefer more formal classroom training, Series 80 training courses can improve your productivity by helping you learn to make full use of your computer.

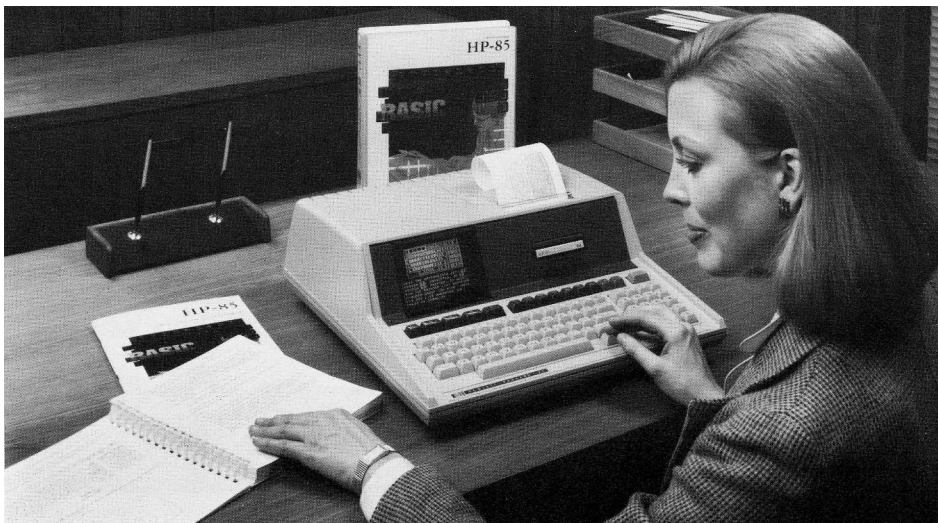
Beginner's Course: Designed for people with little or no computer background, this course covers all the essentials of operating and programming Series 80 systems. In two days you'll learn about the computer's fundamental operation, from display editing through mass storage. There's a full introduction to BASIC language, including programming tools, flowcharts, and data input, as well as branching, loops, and subroutines.

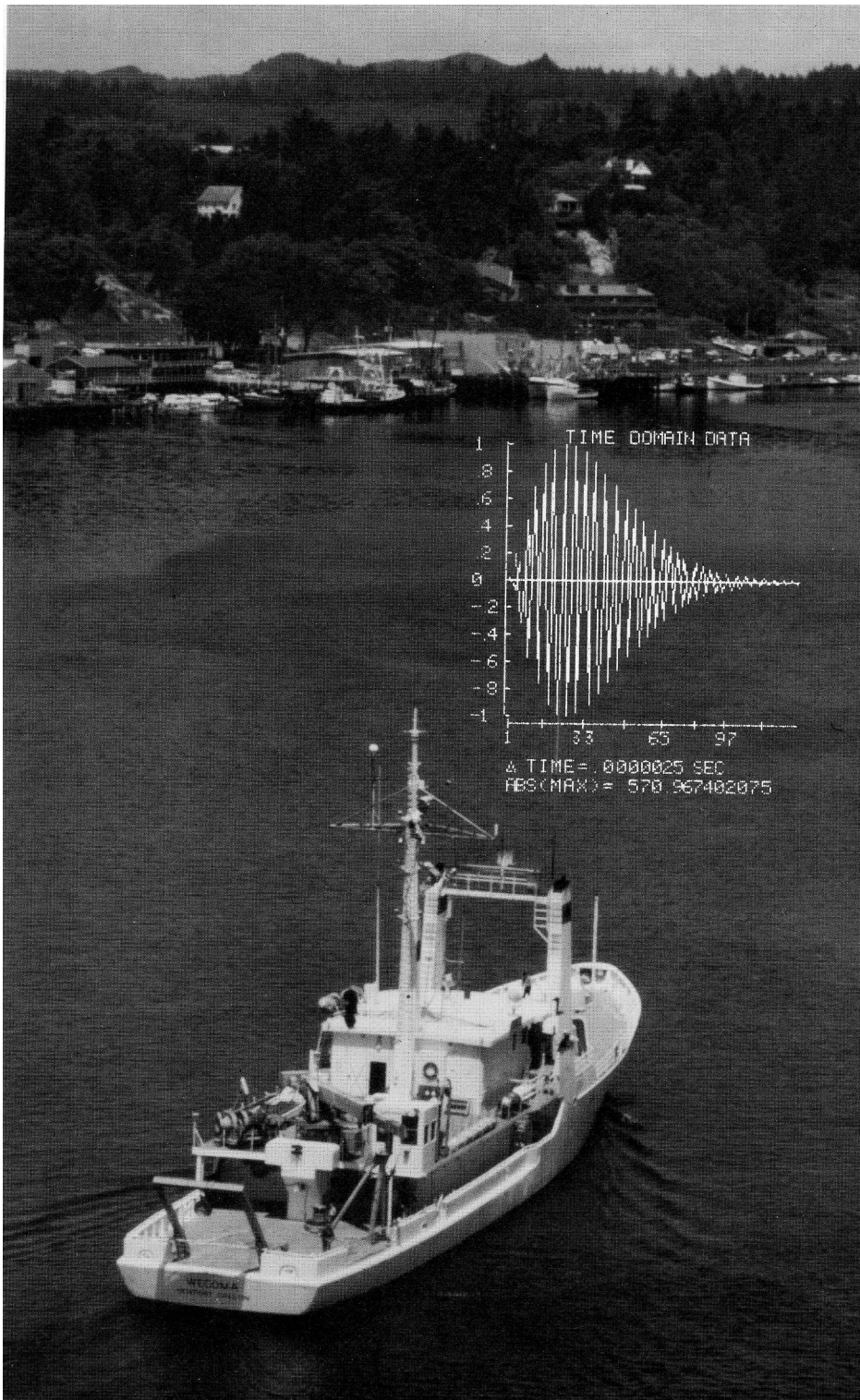
And, you'll learn how to use the special function keys (known as soft keys), program with graphics, and work with HP software. (HP 35048A)

Assembly Language: This three-day course gives you the training necessary to write assembly language programs. Designed for experienced programmers, the course covers such topics as CPU architecture, the operating system, the instruction set, and some input-output programming with built-in peripherals. (HP 35047A)

General I/O: An intensive three-day course, General I/O introduces the BASIC programming features of the Series 80 I/O ROM (described on page 15), and teaches you how to connect, configure, and operate the HP-IB, Serial, GPIO, and BCD interfaces. The course assumes extensive Series 80 operating experience and experience in BASIC programming. (HP 35046A)

Your HP dealer or local HP representative can give you more information on how to register for these three courses.





Photograph courtesy of Jim Larison, OSU Sea Grant

Analytical Solutions: Engineering And Science

Waveform Analysis

This pac offers you a wide range of applications in digital signal processing. In addition to electrical engineering applications, the pac gives you problem-solving capabilities in such areas as acoustics, oil exploration, engine vibration analysis, signal noise detection, and image processing.

You can input a single function and analyze up to 512 data points on the HP-85 or 1,024 data points on an HP-87.

Or, you can use double data input to enter information on two separate functions. The pac also gives you routines for finding Fourier series coefficients with equally and unequally spaced data.

Waveform Analysis (00085-13035) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

AC Circuit Analysis

With this pac you can quickly and easily model your AC circuits and accurately analyze their performance. By simulating your circuit designs on a Series 80 Personal Computer, you can recognize design problems early in the development process—before making substantial investments in the project.

You can use an interactive mode of operation to design optimal solutions—whether they involve amplifier design, power and transmission systems, control systems, instrumentation, filter design, spectral analysis,

or environmental component design. To evaluate alternative circuit designs, you simply input new values for variables and continue to run your simulation until you reach the response you desire.

With AC Circuit Analysis you can calculate the magnitude and phase of node voltage, branch voltage, and branch current. You can also compute branch power and the ratio of any of these parameters. The pac performs these computations for resistors, capacitors, inductors, voltage controlled sources, and independent current sources.

AC Circuit Analysis (00085-13006) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Math

The Series 80 Math Pac provides quick access to mathematical routines that are commonly employed in calculus, numerical analysis, linear systems, geometry, and special functions. It's designed to free you from heavy manual computation by saving you time in writing numerical analysis routines—whether they're for applications in engineering, physical sciences, manufacturing, or research and development.

Calculations that you can perform with this pac include: simultaneous equations (matrices), solution to $f(x)=0$ on an interval (root finder), integration with equally and unequally spaced points, ordinary differential equations, Chebyshev polynomials, Fourier series for equally- and unequally-spaced points, complex number operations, triangle solutions, and fast Fourier transform.

Math (00085-13005) includes: manual, supplement, tape and 5¼" disc for the HP-85 and 5¼" disc for the HP-87.

Electronics Engineering Pac

This *multipac* offers you an integrated solution to your analytical problems by combining the AC Circuit, Waveform Analysis, and Math Pacs. You can use the pac to do a range of electronics engineering problems. For example, you can use the Math pac to perform analysis on a series of data points, do waveform analysis on electronic noise, and then model a circuit with the AC circuit analysis capabilities. This pac gives you this range of solutions in a single package—and at a lower price than you'd pay for the three pacs individually.

Electronics Engineering Pac (00085-13059) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87 for each of the three pacs included (Waveform Analysis, Math, and AC Circuit Analysis).

Surveying

You can use this software in your most frequently-encountered surveying computations—to calculate and reduce data fields in field traversing, coordinates, azimuths, sectors and fill areas, and station and elevation for vertical curves and grades. You'll be able to make fast and easy calculations with improved accuracy, and maintain coordinate point storage for easy recall of data.

Surveying (00085-13046) includes: manual, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Software Suppliers

Software from independent suppliers covers such applications as analyzing and designing digital filters and discrete-time systems, transient response, structural design, chemical engineering, and multicomponent-multifeed distillations.

Analytical Solutions: Statistics

General Statistics

Whether you're involved in life science, industry, behavioral science, investment analysis, or pure research, General Statistics offers you considerable flexibility in evaluating your data.

Among the analyses you can run are one-sample analysis, paired-sample analysis, chi-square tests, one- and two-way analysis of variance, t-test, and multiple linear regression. The pac also eliminates the need for books of reference tables by providing right-tail probabilities for eight common continuous and discrete distributions.

General Statistics (00085-13003) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Basic Statistics And Data Manipulation

This pac gives you the tools you need to develop a flexible data base for your statistical analysis. You can use this pac to prepare your data for analysis, study its general characteristics, and summarize the information with such summary statistics as mean, number of observations, standard deviation, median, confidence interval, and quartiles.

Basic Statistics and Data Manipulation (00085-13036) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Regression Analysis

After entering your data in the computer—using the Basic Statistics and Data Manipulation pac—you can use the Regression Analysis Pac

to analyze the relationships between a dependent variable and one or more independent variables. The pac lets you use the least squares method to fit your data to a polynomial regression or to a multiple linear regression.

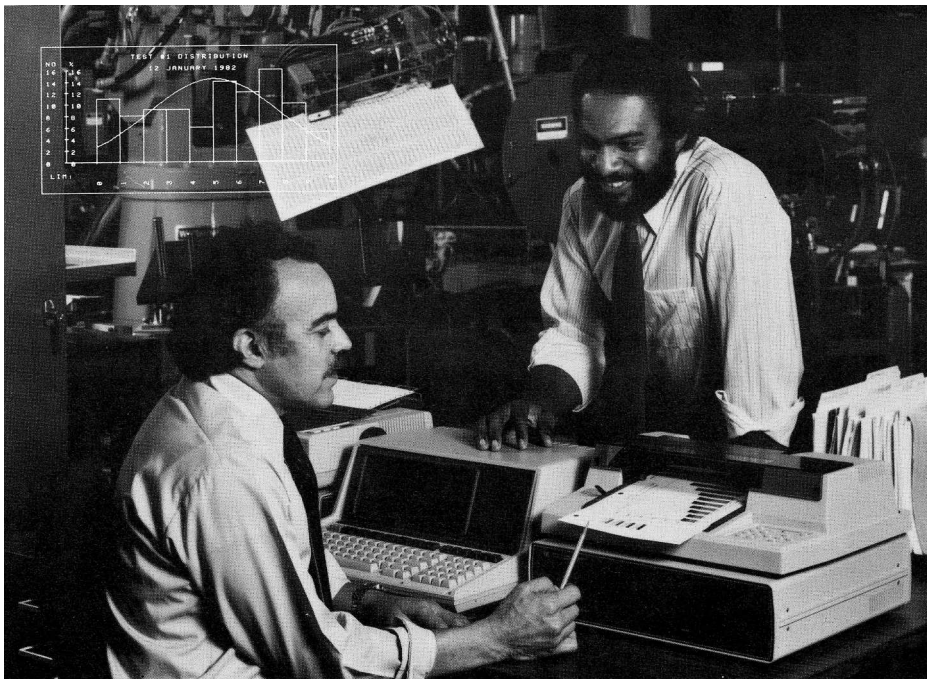
You can also do residual analysis, and automatically see the differences between the actual and predicted Y-values. The pac can also produce an analysis of variance table at each step of a multiple regression so you can remove insignificant variables from the table.

Regression Analysis (00085-13037) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Statistical Analysis Pac

This pac gives you a complete, integrated package for performing statistical analysis. Statistical Analysis Pac is a *multipac* that combines General Statistics, Basic Statistics and Data Manipulation, and Regression Analysis for a total solution to your statistical problems. Now, if you want to perform a regression analysis, you can use the Basic Statistics and Data Manipulation pac to enter your data and put it in a form that's ready for sophisticated regression analyses. The General Statistics pac is like a bonus—to give you the additional capability of running a variety of high-level analyses.

Statistical Analysis Pac (00085-13058) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87 for each of the three pacs included (General Statistics, Regression Analysis, and Basic Statistics and Data Manipulation).



Graphics Presentations

With Series 80 Graphics Presentations, you can generate charts, graphs, and text pages that look like a graphic artist created them (and the computer does it faster, while giving you duplicates at the touch of a key).

You can create your graphs on paper or acetate, and use them in a variety of ways—customer presentations, management meetings, reports, sales programs—to get and hold your audience's attention, and to make your points *quickly*.

Even if you've never used a computer before, you can learn to create professional-quality slides and charts in no time at all. The manual that comes with the pac gets you started with a few examples. After that, you can simply follow the instructions and messages in the program itself.

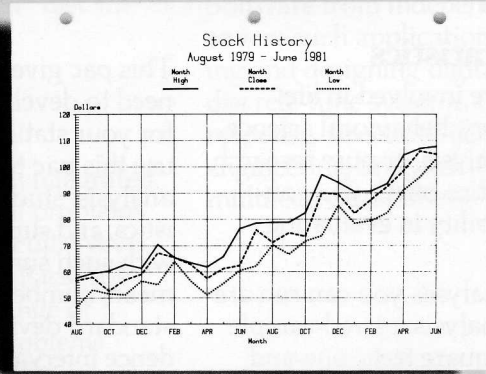
Graphics Presentations on an HP-87 Personal Computer offers the additional capabilities of creating organization charts, and doing line and arc drawing. And the HP-87's large screen lets you see your graph or chart in detail as you create it.

Graphics Presentations for—HP-85 (00085-13038) includes: manual, two tapes, and two 5¼" discs.

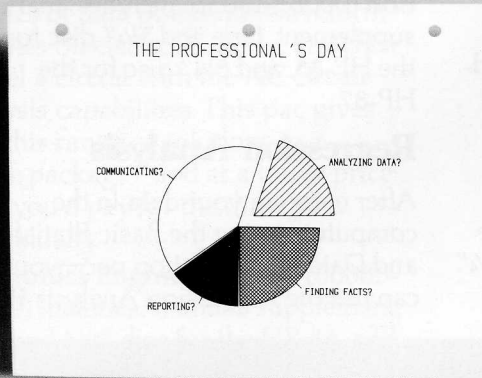
HP-87 (00087-13002) includes: manual, and two 5¼" discs.

With Graphics Presentations you'll be able to create:

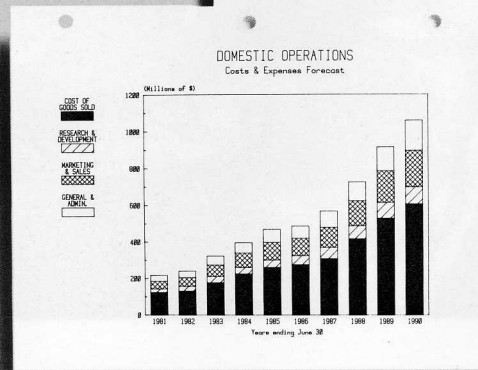
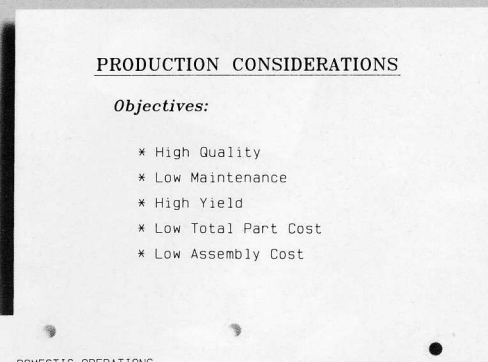
- *line charts*— you can chart from two to 24 data points per line using a choice of line types and pen colors.



- *pie charts*— of one or two pies, with from two to 24 slices per pie (25 on the HP-85). And there's a choice of labelling styles, hatching types, and up to four pen colors (16 pen colors on the HP-87).



- *text pages*— with up to nine different letter sizes, and a choice of type styles, pen colors, and highlighting.



- *bar charts*— standard, clustered together (to show three different figures for one year, for example), or stacked, with a choice of labelling styles, hatching, and pen colors.

Decision Support Software

Linear Programming

This pac gives you a simple and convenient means of optimizing linear programming models. It's designed to be adaptable for use in many different fields, including production scheduling, pharmaceuticals, food processing, feed lot blending, media selection, metal alloys, and other applications in manufacturing and business.

The pac is flexible and powerful enough to fit a broad range of applications. With an HP-87 expanded to its maximum operating memory your linear program can process up to 200 variables with 80 constraints. That means you're getting mini-computer power on your personal computer.

And it's user-friendly—a print section allows you to print out your data and check what you've entered. At the same time you can modify the problem or create new ones by adding or removing constraints.

When it solves your problem, the pac prints the optimal solution, which includes solutions variables and their values, objective function values, dual variables and values; then you have the option of calculating a sensitivity analysis.

Linear Programming (00085-13011) includes: manual, supplement, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Financial Decisions

With this pac you can use your Series 80 Personal Computer to perform a variety of financial analyses. The pac is easy to use so you can

concentrate on analysis instead of programming.

The accompanying manual explains financial analysis in terms of the basic concepts of cash flow—to let you reduce your investment decisions to a series of positive and negative flows.

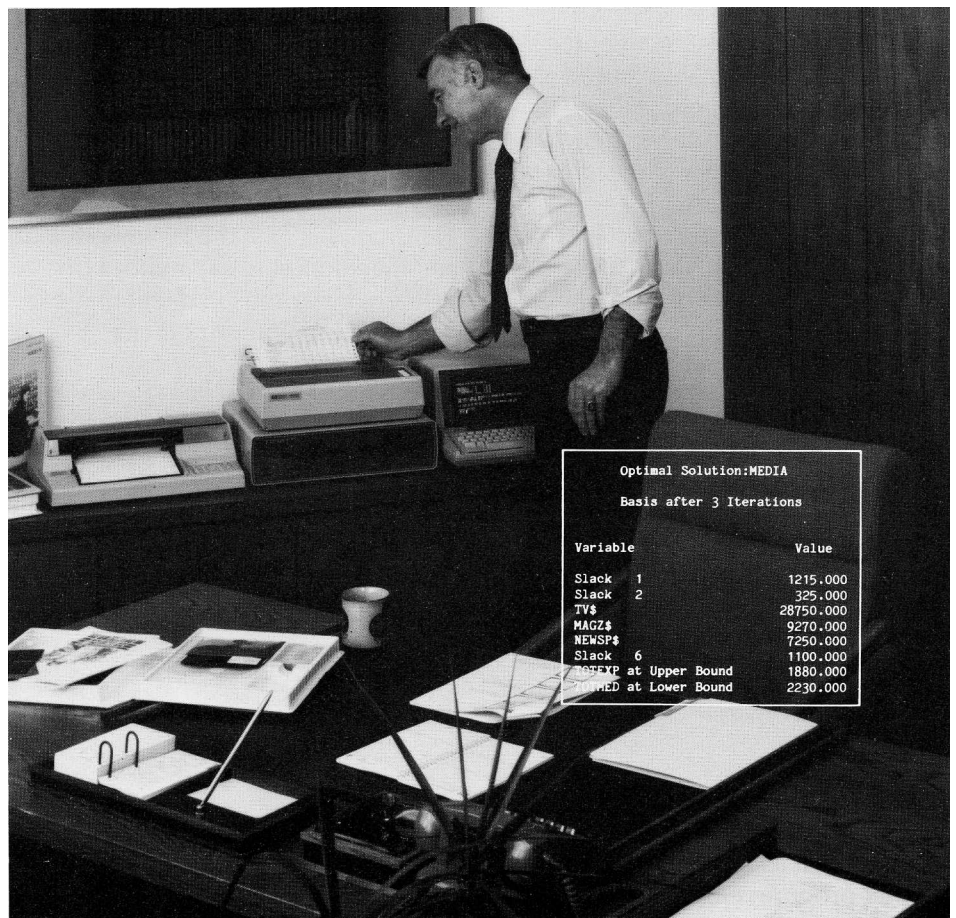
Using this approach you can calculate loan amortization schedules, or do sophisticated discounted cash flow analyses for up to 100 groups of 999 cash flows (including net present value, internal rate of return, and financial management rate of return). You can also run a break-even analysis, and perform various computations involving prices and yields

of notes and bonds. There are also programs for calculating odd-days' interest and depreciation schedules.

Financial Decisions (00085-13004) includes: manual, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

Software Suppliers

Software from independent suppliers includes applications in financial and real estate analysis, including pacs that perform such real estate financial analyses as lease-own, sub-lease, cash flow, and raw land analysis.



VisiCalc® PLUS

VisiCalc offers you one of the most powerful and widely-used analytical tools available today. And, with Series 80 VisiCalc PLUS, you're getting all the power of VisiCalc, PLUS additional graphics and computational capabilities that only HP offers.

With VisiCalc PLUS, a Series 80 computer display screen becomes a window that looks upon a much larger electronic worksheet. Expand a Series 80 Personal Computer to maximum memory and you can do a five-year forecast with over 250 line items and subtotals. You'll have 63 columns and 254 rows to work with.

And that's just the beginning of the power of VisiCalc PLUS. You can use it for doing *what-if* planning, have it aid you in statistical analysis (such as standard deviation and mean calculations), or perform financial analyses on particular variables—including Net Present Value and complex Internal Rate of Return computations. Or you can use it to create a worksheet for scheduling.

Consider the convenience of such a large worksheet—if you were working with a comparable grid on paper (and each cell covered one square inch), you'd need a billboard-size sheet over 20 feet high and five feet wide.

And when you want to eyeball your data and look for trends and patterns, you can use the graphics capabilities (that's another unique PLUS that HP offers you).

With the data files you create using VisiCalc PLUS you can produce pie charts, as well as line and bar charts. Another program enables you to test

your data for goodness of fit to a linear regression or three other transformed linear curves, and then plots the data and the desired curve. VisiCalc PLUS graphics capabilities let you read in data from your tape or disc, specify titles and format, and show the graph on either your display screen or on a graphics plotter. You can have your graphs plotted on paper or overhead transparencies in up to four colors using an HP 7470A graphics plotter.

And you have lots of options for each type of graph or chart, so you can vary the look of your visuals and tailor the graphics to fit your particular needs. For example, you can create line charts on log-log or semi-log axes, as well as on conventional linear axes—all using up to 150 data points per line. Or, you can produce three different kinds of bar charts with up to six different kinds of shading.

VisiCalc PLUS on the HP-87 offers you the additional capabilities of seeing your graphs in detail on your screen before you print them.

VisiCalc® PLUS for—

HP-85 (00085-13042) includes:

manual, pocket guide, tape, and
5¼" disc.

HP-87 (00087-13001) includes:

manual, pocket guide, and
5¼" disc.

VisiCalc® is a registered trademark of Personal Software, Inc.

81

9884

RAINCOOP PLAN 1982-1987

	JAN	FEB	MAR	1QTR	APR	MAY	JUN	JUL	AUG	SEP	3QTR	OCT	NOV	DEC	4QTR	TOT	1QTR
OPERATING RESULTS																	
REVENUES	184.4	99.6	180.5	ERROR	183.5	185	185.6	107.4	108	109.5	324.9	111	112.5	105	328.5	1272	310.59
RENTALS & SERVICES	243.6	232.4	234.5	ERROR	241.5	245	246.4	250.6	252	255.5	758.1	259	262.5	245	766.5	2968	724.71
SALES	348	332	335	1815	345	358	352	358	360	365	1083	370	375	350	1095	4240	1035.3
TOTAL REVENUES	212.28	282.52	284.35	619.15	210.45	213.5	214.72	218.38	219.6	222.65	660.63	225.7	228.75	213.5	667.95	2586.4	631.53
COSTS AND EXPENSES	6.612	6.388	6.365	19.285	6.555	6.65	6.688	6.802	6.84	6.935	20.577	7.03	7.125	6.65	20.805	80.56	19.571
DEPREC	3.828	3.652	3.685	11.165	3.795	3.85	3.872	3.938	3.96	4.015	11.913	4.07	4.125	3.85	12.045	46.64	11.388
INTEREST																	
PRETAX EARNINGS	29.754	28.386	28.643	86.783	29.498	29.925	30.096	30.754	30.78	31.208	92.597	31.635	32.063	29.925	93.623	362.52	88.518
INCOME TAXES	14.282	13.625	13.748	41.656	14.159	14.364	14.446	14.692	14.774	14.980	44.446	15.185	15.39	14.364	44.939	174.01	42.489
AS A PERCENTAGE OF SALES	4.104	4.1044	4.1048	4.1052	4.1056	4.1061	4.1065	4.1069	4.1073	4.1081	4.1085	4.1089	4.1093	4.1097	4.1102	4.1106	4.1110
EXTRAORDINARY INCOME	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
NET INCOME	15.472	14.761	14.894	57.127	15.339	15.561	15.650	16.006	16.006	16.228	48.150	16.450	16.673	15.561	48.684	188.51	46.029
REVENUE SUMMARY																	
TOTAL	348	332	335	1015	345	350	352	358	360	365	1083	370	375	350	1095	4240	1035.3
DIV01	34.8	33.2	33.5	101.5	34.5	35	35.2	35.8	36	36.5	108.3	37	37.5	35	109.5	424	103.53
RENTAL	24.36	23.24	23.45	71.05	24.15	24.5	24.64	25.06	25.2	25.55	75.81	25.9	26.25	24.5	76.65	296.8	72.471
SALES	10.44	9.96	10.05	30.45	10.35	10.5	10.56	10.74	10.8	10.95	32.49	11.1	11.25	10.5	32.85	127.2	31.059
DIV02	52.2	49.8	50.25	152.25	51.75	52.5	52.8	53.7	54	54.75	162.45	55.5	56.25	52.5	164.25	636	155.30
RENTAL	36.54	34.86	35.175	106.58	36.225	36.75	36.96	37.59	37.8	38.325	113.72	38.85	39.375	36.75	114.98	445.2	108.71
SALES	15.66	14.94	15.075	45.675	15.525	15.75	15.84	16.11	16.2	16.425	48.735	16.65	16.875	15.75	49.275	190.8	46.589
DIV03	24.36	23.24	23.45	71.05	24.15	24.5	24.64	25.06	25.2	25.55	75.81	25.9	26.25	24.5	76.65	296.8	72.471
RENTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALES	24.36	23.24	23.45	71.05	24.15	24.5	24.64	25.06	25.2	25.55	75.81	25.9	26.25	24.5	76.65	296.8	72.471
DIV04	10.44	9.96	10.05	30.45	10.35	10.5	10.56	10.74	10.8	10.95	32.49	11.1	11.25	10.5	32.85	127.2	31.059
RENTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALES	10.44	9.96	10.05	30.45	10.35	10.5	10.56	10.74	10.8	10.95	32.49	11.1	11.25	10.5	32.85	127.2	31.059
DIV05	27.84	26.56	26.8	81.2	27.6	28	28.16	28.64	28.8	29.2	86.64	29.6	30	28	87.6	339.2	82.824
RENTAL	22.272	21.248	21.44	64.96	22.08	22.4	22.528	22.912	23.04	23.36	69.312	23.68	24	22.4	70.08	271.36	66.259
SALES	5.568	5.312	5.36	16.24	5.52	5.6	5.632	5.728	5.76	5.84	17.328	5.92	6	5.6	17.52	67.84	16.565
DIV06	69.6	66.4	67	203	69	70	70.4	71.6	72	73	216.6	74	75	70	219	848	207.06
RENTAL	55.68	53.12	53.6	162.4	55.2	56	56.32	57.28	57.6	58.4	173.28	59.2	60	56	175.2	678.4	165.65
SALES	13.92	13.28	13.4	40.6	13.8	14	14.08	14.32	14.4	14.6	43.32	14.8	15	14	43.8	169.6	41.412
DIV07	128.76	122.84	123.95	375.55	127.65	129.5	130.24	132.46	133.2	135.05	400.71	136.9	138.75	129.5	405.15	1568.8	393.06
RENTAL	90.132	85.988	86.765	262.89	89.355	90.65	91.168	92.722	93.24	94.535	280.50	95.83	97.125	90.65	283.61	1098.2	268.14
SALES	38.628	36.852	37.185	112.67	38.295	38.85	39.072	39.738	39.96	40.515	120.21	41.07	41.625	38.85	121.55	470.64	114.92

Accounting And Information Management

Information Management Pac (IMPac)

IMPac gives you a powerful system for list management that's like having an electronic card file at your fingertips. And it's flexible—it lets you create data files with a range of options for conveniently storing approximately 1,000 records.

You can use IMPac to generate lists and reports, including mailing lists in label format. Or, you can select all records from your data file which meet up to 15 separate conditions (for example, geographic region, size of company, zip code, etc.).

There's also flexibility in the way you display your data. A report writer lets you output your records in a choice of formats. And, graphics capabilities let you plot data from individual records, or from statistics that IMPac gathers from the entire file.

Information Management (00085-13045) includes: manual, quick reference card, and 5¼" disc for the HP-85.

Text Editing

With HP-85 Text Editing you can write memos, outlines, and reports on your display screen. You can edit your copy by changing words or moving groups of lines. And, you can save what you've written on a tape or disc and call it up later for more editing or hard-copy printing.

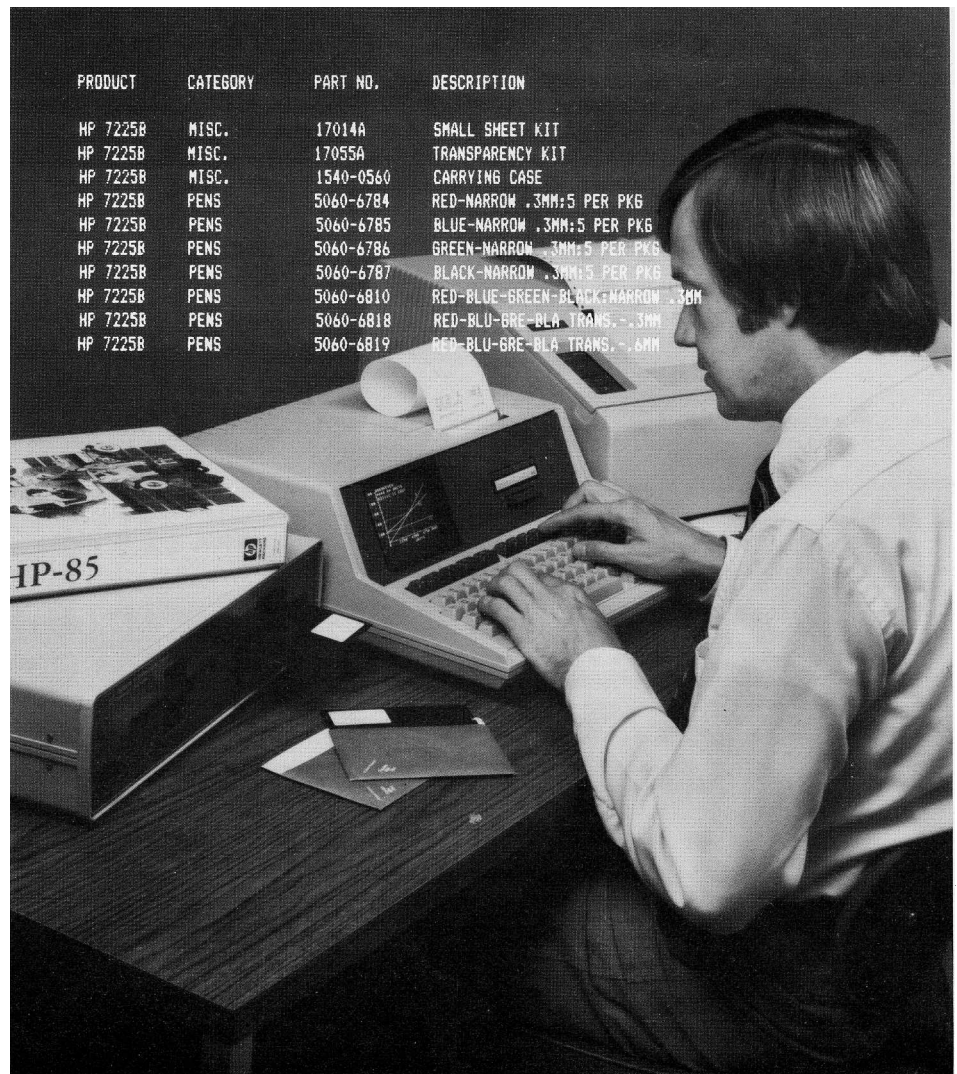
Text Editing (00085-13034) includes: manual and tape and 5¼" disc for HP-85.

Software Suppliers

Series 80 accounting software is available from several independent suppliers. Products vary from simple single-function programs to complete fully-integrated systems. Consult your authorized Series 80 dealer or your software catalog for Series 80 accounting software. Be sure to look for the HP+ emblem signifying professional, user-proven software products.

Games And Games II

Two games pacs include card games, (including blackjack), board games, dynamic action games, and games of pattern generation. Games will run on both the HP-85 and HP-87; Games II is a series of graphically-displayed action games designed specifically for the HP-85.



Data Communications

Data Communications Pac

This pac lets you turn your Series 80 Personal Computer into an intelligent, remote terminal. Your Series 80 computer can then communicate with other asynchronous computers and terminals.

The pac gives you a range of transmission rates—from 50 to 9600 baud (bits per second). You can transfer your data files to a remote device (uploading) or from a remote device to your Series 80 system (downloading).

With these capabilities you can connect your computer to another computer in your office. Or, you can tie into such data banks as the Dow Jones News/Retrieval Service, The Source, and CompuServe.

DataComm enables you to use all Series 80 peripherals with your

system while you are communicating with another device. You can print reports, store and retrieve data, plot graphs, and use any other Series 80 peripherals while you are on line.

Remote devices, such as terminals and computers, can send commands to your Series 80 Personal Computer through communications lines. That means you can access and control the entire power of your computer from a remote site.

Finally, DataComm lets you change the communications configuration of your Series 80 system—including baud rate, parity, and printer output—while the pac is running. There's no need to stop the program or hang up in order to make changes to the pac.

Data Communications (00085-13044) includes: manual, tape and 5¼" disc for the HP-85, and 5¼" disc for the HP-87.

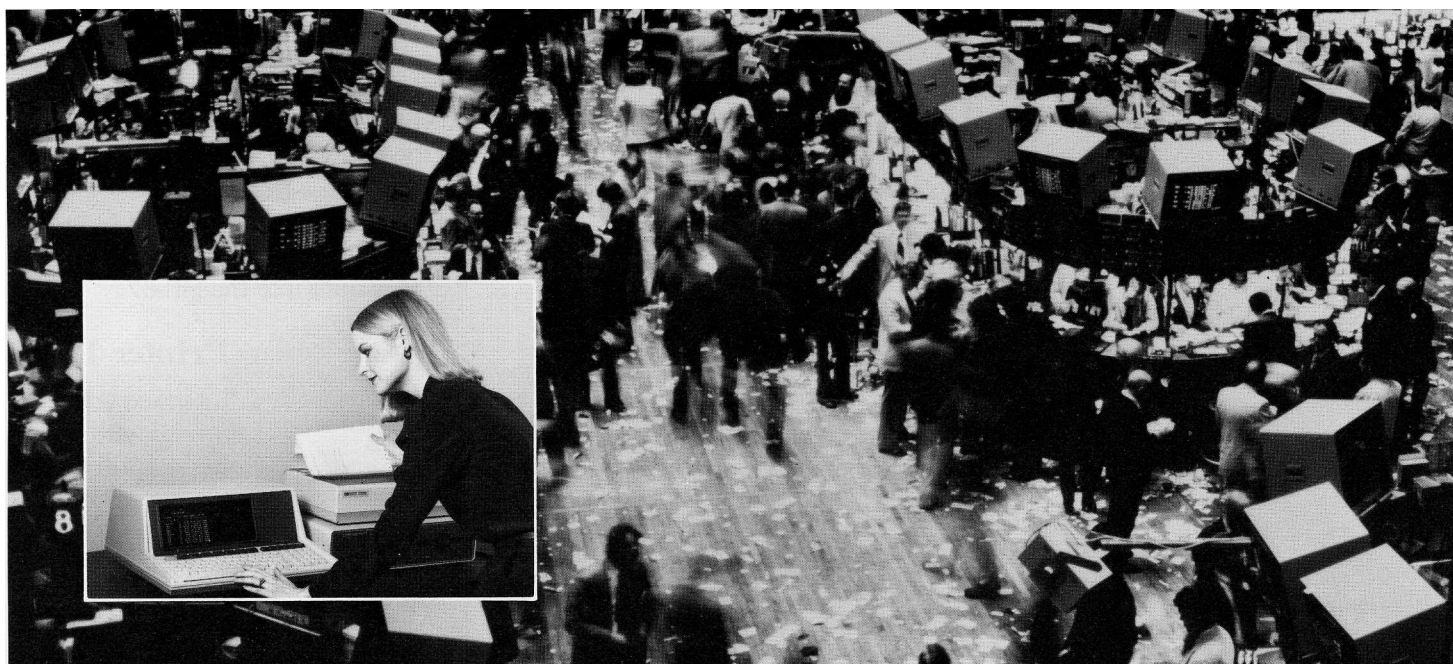
DataComm runs only with full duplex, asynchronous modems or

hardwired RS-232 lines. Half duplex cannot be used because it requires a line turnaround sequence which is not provided in the program.

Series 80 Integrated Modem

This package consists of a modem that you can plug into your Series 80 computer and connect directly into your phone lines. Software for data communications comes with the modem, so it's ready to run as soon as you plug it in. You can use the modem to turn your Series 80 Personal Computer into an intelligent, friendly terminal, and connect it with remote computers. That means you can tie into such data banks as the Dow Jones News/Retrieval Service, CompuServe, and The Source. The Series 80 Modem also features such capabilities as automatic dialing and answering.

(HP 82950)



CP/M®

CP/M System

With CP/M running in your HP-87, you've opened the door to a whole new world of software capabilities. CP/M, short for Control Program for Microcomputers, has become a virtual industry standard, with a total of nearly 300,000 users today. There's a vast selection of software that's compatible with CP/M operating systems.

Some of the most valuable application software includes word processing and data-base management systems. For instance, there are word processing programs that help with

spelling, as well as performing the more standard editing and text manipulation functions. Other programs help with professional time and billing, and critical path analysis. In addition, CP/M gives you ready access to such languages as PASCAL, FORTRAN, and COBOL. Any CP/M program formatted for the HP 125—and not altered for specific HP 125 features—will run on the HP-87.

The CP/M System (HP 82900A) for the HP-87 consists of a module that plugs into the back of the computer, Introduction to the CP/M System, CP/M Reference Manual, and a 5¼" disc that contains a copy of CP/M (version 2.2).

CP/M® is a registered trademark of Digital Research, Inc.

Firmware Enhancements

These enhancements include ROM's (read-only memories) and the ROM drawer. HP ROM's are used to integrate peripherals into a Series 80 system, or to enhance the capabilities of Series 80.

The modules plug into the back of the computer via the HP 82936A ROM Drawer. The drawer will fit any of the four ports on the back of your Series 80 Personal Computer and has slots for up to six ROM's (a Series 80 Personal Computer will operate with only one ROM drawer). For firmware specifications, see the Series 80 Hardware brochure.

HP-85 Mass Storage ROM

The Mass Storage ROM lets you interface your HP-85 computer with the HP 9895A or HP 82900 Series Flexible Memory, or HP 9135A Winchester/Disc memory for powerful mass storage capabilities. Disc memory, using this ROM, is totally integrated into the system, so you're ready to go when you turn on the computer.

Mass Storage ROM (00085-15001) includes: manual, pocket guide, and Mass Storage ROM. (Mass Storage ROM is built into the HP-87.)

HP-85 Plotter/Printer ROM

This ROM lets you interface your HP-85 Personal Computer with any of HP's graphics plotters or full-width printers. It also adds several graphic enhancements to the standard HP-85 CRT graphics.

Plotter/Printer ROM (00085-15002) includes: manual, pocket guide, and ROM.



HP-87 Plotter ROM

This ROM lets you interface your HP-87 with any HP graphics plotter.

Plotter ROM (00087-15002) includes: manual, pocket guide and ROM.

(Printer ROM is built into the HP-87.)

Assembler ROM

The Assembler ROM lets you write assembly language programs. Its manual documents hundreds of routines in the operating system. By writing assembly language programs you can create new BASIC commands and functions, and increase processing speed in some applications. You can write programs that give you entry points into routines in the BASIC operating system, including all math routines, high-and low-level CRT control, general I/O routines, and other utility routines.

You can use it to redefine existing BASIC keywords and expand I/O control. Source and object code can be stored on HP-85 tape cartridge or disc for the HP-85 or HP-87.

Assembler ROM for—

HP-85 (00085-15007) includes: manual, pocket guide, ROM, tape, and 5¼" disc.

HP-87 (00087-15007) includes:

manual, pocket guide, ROM, and 5¼" disc.

System Monitor

Used with the Assembler ROM, the System Monitor aids in developing and debugging assembly language software. Together, the Assembler ROM, Programmable ROM drawer, and System Monitor provide a complete software development package.

System Monitor (HP 82928A) includes: manual and System Monitor.

Programmable ROM Drawer

The Programmable ROM drawer lets you use assembly language code and BASIC programs stored on EPROM's. This gives you high-reliability storage while saving memory. (EPROM's must be programmed using an EPROM programmer).

Programmable ROM Drawer (HP 82929A) includes manual and ROM Drawer.

HP-85 Matrix ROM

The Matrix ROM gives you a powerful set of statements and functions for working with arrays—both matrices (two-dimensional

arrays) and vectors (one-dimensional arrays). It lets you perform calculations with more convenience, speed, and accuracy than you could using your Series 80 Personal Computer alone.

Matrix ROM for—

HP-85 (00085-15004) includes: manual, pocket guide, and ROM.

I/O ROM

Adding straightforward I/O commands to Series 80 BASIC, the I/O ROM provides a wide variety of ways for Series 80 computers to interface with virtually any digital instrument. The I/O commands permit easy communication with any of the Series 80 interfaces (GPIO, HP-IB, BCD, RS-232, HP-IL, Series 80 Modem) which in turn communicate with instruments. It is necessary with the Data Communications Pac and Series 80 Modem to provide terminal emulation.

I/O ROM for—

HP-85 (00085-15003) includes: manual, pocket guide, and ROM.

HP-87 (00087-15003) includes: manual, pocket guide, and ROM.

Advanced Programming ROM

The functions, statements, and commands of this ROM give you extended control over data, programs, and your Series 80 system operations. With this ROM's sub-programs, cursor control, and program development commands, you can improve programming efficiency and facilitate program development.

Advanced Programming ROM for—
HP-85 (00085-15005) includes: manual, pocket guide, and ROM.



Series 80 Users' Library

The Users' Library contains over 400 programs written by owners of Series 80 Personal Computers. These programs cover a broad range of applications, a sampling of which appears below to show you how other Series 80 owners have adapted their computers for their particular tasks.

Business and Finance:

Bond Yield
Bond Switch
Exponential Smoothing: Stocks
Price/Earnings Ratio
Warrant Price Calculation
Lease Income
Make-Buy Decision Analysis
Linear/Quadratic Problem Solving
Mortgage Analysis

Engineering:

Two Geographic Points
Passive Solar Simulator
Ladder Network Analysis
Vessel Capacity Evaluation
Interpretation of EE Units
Radio Horizon Calculator
Modal Analysis

Mathematics/Numerical Analysis:

Hyperbolic Functions
Integration with Unequal Points
Contour Plot
Spherical Triangles
Vector Exponentiations
General Fast Fourier Transform
Complex Determinant
Circular Segments
Jacobian Elliptic Functions

Probability/Statistics:

Expected Value of Perfect Information
Confidence Limits
Chi-Square
Differences between Variances
One-Way Analysis of Variance

Life Sciences:

Photosynthesis

Physical Sciences:

Spheroid Earth
Unit Cell Calculations
Young's Double Slit Experiment
Snell's Law
Einstein Distortions
Avogadro's Number
Nuclear Decay
Chromatograph-Data Acquisition

Social and Behavioral Science:

Natural Selection Experiment
Wechsler Memory Scale

Series 80 Solution Books

These books provide you with ready-to-use programs. You need only type them into your computer and they're ready to run. Each book provides nine to twelve programs for a given application area. You can also purchase the programs on a software medium (tape or 5¼" disc) directly from the Users' Library.

Business Series

Stocks & Bonds
Securities & Investment Analysis
Budgeting & Finance I
Budgeting & Finance II
Management Science
Real Estate

Engineering Series

Electrical Engineering

Scientific Series

Math
Numerical Analysis
General Probability
Decision Analysis

Educational Series

Math Learning
Science Learning I
Science Learning II
Electrical Engineer Learning

Recreational Series

Games

Software Support

At Hewlett-Packard we realize that hardware is just part of your solution. Good software is the rest. That means good application and analytical software, easy programming, and software support.

Software support from HP or your dealer helps you optimize your system's productivity and avoid software problems. HP Series 80 software support is provided by our System Information Service (SIS). Your local dealer may offer similar services.

System Information Service (SIS)

This service gives you fast access to a Systems Engineer by telephone, as well as a quarterly publication, a software status bulletin, and documentation update information. It's a software support program especially designed to give you up-to-date information on your system and answers to your questions on its operation and programming.

SIS includes:

- **Phone-in Consulting Service (PICS):** An HP Systems Engineer will respond to your questions or problems within four hours after you call. Once you purchase SIS, you simply designate a PICS caller and an alternate. Both will need to complete an HP training course or demonstrate equivalent experience in the operation and programming of HP Series 80 equipment and software.
- **HP COMMUNICATOR for Series 80 Systems:** This quarterly publication contains information on the latest revisions to HP-supported software, operating techniques, and programming techniques.

- **Updates:** You also receive information on revisions and updates to the reference manuals on your HP system and software.

- **Software Status Bulletin:** Issued quarterly, this publication describes current software problems and work-around solutions and permanent fixes where applicable.

You can purchase two levels of software support:

- **SIS for Series 80, Basic Systems:** includes support for your mainframe, enhancement ROM's (except the I/O and Assembler ROM's), standard peripherals, and most HP software. (HP 98090K)

- **SIS for Series 80 and HP 9915, Full I/O Support:** includes support for Data Communications software, the I/O and Assembler ROM's and all interface modules. You must purchase SIS for basic systems in order to take advantage of full I/O support. (HP 98091K)

If you purchase non-HP application software, the supplier of that software will provide application software training and support.

Consulting

Provided by experienced Systems Engineers, HP consulting is designed to help you successfully implement and integrate your software with your Series 80 Personal Computers and related peripherals.

Software Consulting gives you technical assistance beyond the scope of our training courses or SIS. HP's General Purpose Consulting Service (HP 98096A) provides one day of personalized assistance in system operation, recommendations for improved performance, or suggestions on applications design.

We also offer Interfacing Consulting Services (HP 98097A). In addition, consulting is available as Time and Materials Systems Engineering Assistance (HP 35021D), when you need less than a full day's service.

Your HP Dealer, Original Equipment Manufacturer, or software supplier may also offer software support, training, and consulting services, so be sure to see what services are available from them.

For More Information

For additional information and a personal demonstration, see your nearest HP dealer or local Hewlett-Packard representative. For details and addresses of your nearest dealer or HP representative, call TOLL FREE 800-547-3400. In Oregon, Alaska, and Hawaii call 503-758-1010. TTY users with hearing or speech impairments, please dial 503-758-5566.

Software/Hardware Matrix

APPLICATION PAC:	Minimum required system elements using HP-87 and mass storage device: *	Minimum system elements required using HP-85:
BASIC Training	**	
VisiCalc® PLUS	32K Memory Module (HP 82907A)	16K Memory Module (HP 82903A)
VisiCalc® PLUS graphics portion (additional elements)	Graphics Plotter (HP 7470A or HP 7225) HP Plotter ROM (00087-15002) HP ROM Drawer (HP 82936A)	Graphics Plotter (HP 7470A or HP 7225) HP Plotter/Printer ROM (00087-15002) HP ROM Drawer (HP 82936A) HP-IB (HP 82937A)
Graphics Presentations	64K Memory Module (HP 82908A) Graphics Plotter (HP 7470A or HP 7225) HP Plotter ROM (00087-15002) HP ROM Drawer (HP 82936A)	16K Memory Module (HP 82903A) Graphics Plotter (HP 7470A or HP 7225) HP Plotter/Printer ROM (00085-15002) HP ROM Drawer ROM (HP 82936A) HP-IB (HP 82937A)
Financial Decisions		
Linear Programming		
Text Editing	**	
Information Management	**	
Information Management graphics portion	**	Graphics Plotter (HP 7470A or HP 7225) HP Plotter/Printer ROM (00085-15002) HP ROM Drawer (HP 82936A) HP-IB (HP 82937A)
General Statistics		
Basic Statistics and Data Manipulation		
Regression Analysis	#	#
Statistical Analysis Pac		
AC Circuit Analysis		
Waveform Analysis		
Math		
Electronics Engineering Pac		
Surveying		
Data Communications	Serial Interface (HP 82939A) ROM Drawer (HP 82936A) I/O ROM (00087-15003) Modem	Serial Interface (HP 82939A) ROM Drawer (HP 82936A) I/O ROM (00085-15003) Modem 16K Memory Module (HP 82903A)
Games		
Games II	**	
CP/M®	CP/M System (HP 82900A)	**

*NOTE: You need a 5-1/4" flexible disc mass storage unit to run any of this software on the HP-87

#requires Basic Statistics and Data Manipulation pac

**software not available for this mainframe

United States

Hewlett-Packard
Personal Computer Division
1010 N.E. Circle Blvd.
Corvallis, OR 97330.

Australia

Hewlett-Packard
Australia (Pty.) Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130
Australia

Canada

Hewlett-Packard (Canada) Ltd.
6877 Goreway Drive
Mississauga, Ontario
L4V1M8

Europe, North Africa, Middle East

Hewlett-Packard SA
7, rue du Bois du Lan
P.O. Box
CH 1217 Meyrin 2
Geneva, Switzerland

Hong Kong

Hewlett-Packard Hong Kong, Ltd.
5th and 6th Floors
Sun Hung Kai Centre
30 Harbour Rd.
Hong Kong

Japan

Yokogawa-Hewlett-Packard, Ltd.
29-21, Takaido-Higashi
3-chome
Suginami-ku, Tokyo 168

New Zealand

Hewlett-Packard (N.Z.) Ltd.
P.O. Box 9443
Kilbirnie
Wellington 3

Singapore

Hewlett-Packard
Singapore (Pte.) Ltd.
Alexandra Post Office
P.O. Box 58, Singapore
9115

South Africa

Hewlett-Packard SA (Pty.) Ltd.
Private Bag, Wendywood
Sandton, 2144
South Africa

Other Countries

Hewlett-Packard
Intercontinental
3495 Deer Creek Road
Palo Alto, California 94304
U.S.A.

