DIGITAL RESEARCH® NEWS

FOR DIGITAL RESEARCH USERS EVERYWHERE — FOURTH QUARTER 1981 VOLUME 1, NO. 1

Digital Research Moves to New, Modern Facility

Digital Research has expanded into a contemporary new facility overlooking Monterey Bay.

This new facility adds 16,000 square feet of operating space to Digital Research's headquarters, two Victorian houses totalling 7,000 square feet. This move will more than double Digital Research's operating space. The building is located at 160 Central Avenue in Pacific Grove, Calif.

The company's mailing address and phone number will remain the same: P.O. Box 579, Pacific Grove, CA 93950; (408) 649-3896.

Venture Firms Invest In Digital Research

Four leading venture capital firms recently invested in Digital Research. The four are T.A. Associates of Boston (the lead investor); Hambrecht & Quist Group of San Francisco; Page Mill Partners of Palo Alto, Calif.; and Venrock Associates of New York.

According to President and Founder, Gary Kildall, *"This relationship will give us the ability to increase research and development and will allow us to expand to provide full systems software support for a variety of microprocessors."*

He adds, *"Further, new display and communications technologies—as well as more sophisticated processor architectures—mean that the microcomputer software industry must approach computing from a nontraditional viewpoint. We intend to take this approach. Our new product R & D group will meet these new challenges and provide products for markets previously unapproachable by Digital Research."*

Kildall expects one of the greatest benefits from the investment to be the years of financial, technical and management experience brought to the company by its investors. One mechanism for infusing this business expertise is the addition of two representatives of the investors to Digital Research's board of directors:

Jacqueline C. Morby of T.A. Associates and Larry Mohr of Hambrecht & Quist.

According to new board member Morby, a vice president of T.A. Associates, *"We started looking at microcomputer software companies a year before we chose Digital Research. It's one of the few times that we as investors had an opportunity to enter on the ground floor of a new, rapidly growing industry."* According to Insight Onsite (a market research firm in Saratoga, Calif.) the market for microcomputer software, now estimated at $300 million in annual sales, is expected to grow to greater than $5 billion by 1985.

"A key issue for us," Morby continued, *"is the rapport we feel with Gary, and our feeling that he is an outstanding leader with a good understanding of the industry.*

"We chose Digital Research because it has the strongest technological base and the strongest market position of any microcomputer software company." She adds, *"It has the foundation to become the leader in this industry in the 1980 s."*

New Board of Directors members (l-r) Larry Mohr of Hambrecht & Quist and Jacqueline C. Morby of T.A. Associates join Gary Kildall, president and founder, Dorothy McEwen, vice president and G. Gervaise Davis III, corporate attorney.

Compiler Systems Acquired;

Language Division Formed Under Gordon Eubanks, Jr.

Digital Research Inc. has acquired Compiler Systems Inc., a $1 million language company located in Sierra Madre, Calif.

As a result of the acquisition, Digital Research will form a separate division specifically dedicated to developing and marketing microcomputer programming languages. Gordon Eubanks, Jr., president and founder of Compiler Systems has become a vice president of Digital Research in charge of the new language division, according to Dorothy McEwen, Digital Research vice president.

Compiler Systems, the first company to be acquired by Digital Research, develops and markets CBASIC™, CBASIC-86™, and CB-80™, three microcomputer programming languages. These languages are used for writing commercial software application programs. CBASIC is the industry's most widely used language for implementing business applications. CB-80, a total programming system, maintains the features of the industry standard CBASIC language, but provides many new features.

Under the direction of Eubanks, the new language division will be fully operational in Pacific Grove very soon, McEwen said. Eubanks added, *"Compiler Systems will maintain a full level of customer support throughout the transitional period."*

The new division's products will include CBASIC, CBASIC-86, CB-80 and Digital Research's PL/I-80™, a powerful microcomputer language that is upwardly compatible with PL/I, long offered on mainframes and standardized a few years ago as Subset G for popular minicomputers.

"Our commitment is to provide the industry with one-stop shopping for total software systems support," McEwen said. *"Gordon's experience with languages, combined with our*

continued page 7

IN THIS ISSUE

Digital Research Has CP/M-86 for IBM Displaywriter 2

MP/M-86™ Operating System Now Being Shipped 3

Engineer's Self Teaching Exercise Leads to Selection of CP/M As Management Tool at Finnegan-MAT Corp. 4

CP/M® Compatible Software Catalog Now Available 6

CP/M Compatible Software Available 6

MP/M II™ Offers Record and File Locking for Multi-User, Multi-Task Systems

Digital Research recently announced MP/M II, a new operating system for multi-user microcomputer systems. It features record and file locking, as well as optional *"password protection"* for data security.

According to Director of Marketing, John Katsaros, the most significant features of MP/M II are record and file locking. *"Together, they are designed to prevent inaccuracies in data which can result when two or more users are updating the same files (or records) at the same time,"* Katsaros said. *"For example, when a file is opened in locked mode, only one user can access it at any given time. Until the user closes the file, other requests for that file are denied.*

"When a file is opened in the unlocked mode," he continued, *"users can temporarily lock individual records within that file. When a record is locked, all other user requests for that record are denied, until the record is unlocked."*

However, *"locking a record"* is not the only method users can employ to assure accurate updates to records, according to Katsaros. *"Alternately, when a record is unlocked, multiple users can employ a command called 'test and write record' before the update is recorded on disk. The 'test and write record' command compares the updated record with an image of the original record most recently read off the disk. If the disk copy has been altered, an error message is returned to the application program."*

"Finally," Katsaros said, *"in the read-only mode, multiple users can read the same files but cannot alter them in any way."*

An additional MP/M II feature assures privacy and security in a multi-user environment, according to Katsaros. *"MP/M II offers an option that enables passwords to be assigned to directories and files. For added security, all passwords are encrypted."*

MP/M II also includes many utilities that previously were available only as options. These include RMAC™ a relocatable macroassembler; LINK-80™, a linker with overlay facilities; and LIB, a program library management utility. *"The RMAC utility makes MP/M II a more powerful software development operating system,"* according to John Katsaros, director of marketing. *"The additions of LINK-80 and LIB allow OEMs much more flexibility in their ability to ship and maintain their software products."*

Minimum requirements for MP/M II are: an 8080, 8085, or Z-80® processor, 48K RAM, a clock timer interrupt, one disk subsystem and a console. It can support up to 16 consoles, 16 printers and 16 disk drives with up to 512 megabytes of

continued page 3

PRODUCT UPDATE

XLT86™ Reduces Conversion Effort in Assembly Language Program Translation

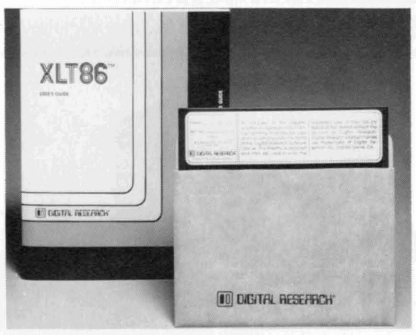
An 8- to 16-bit assembly code translator is now available from Digital Research. Called XLT86, it is designed to help ease the time-consuming process of converting CP/M® software products from 8080- to 8086-based microcomputers.

"The resulting 8086 program is both simpler and more compact than equivalent programs produced by other translators."

XLT86 can be used to translate any assembly language programs that are compatible with Digital Research's ASM, MAC™ or RMAC™ assembler format. The XLT86 program translator first reads an 8080 assembly language program and then produces an output file containing 8086 assembly language statements acceptable to the Digital Research ASM-86™ assembler.

Unlike other 8086 code converters that translate a single 8080 instruction into as many as ten 8086 instructions, XLT86 performs extensive data flow analysis to determine register usage throughout the original program. The information collected through this analysis is used during program translation to eliminate unnecessary flag save and restore operations.

"The resulting 8086 program is both simpler and more compact than equivalent programs produced by other translators." according to Curt Geske, of the Digital Research marketing group. *"Furthermore, XLT86 allows OEMs, end users and software vendors to preserve their investment in 8080-based assembly language programs when changing to 16-bit, 8086-based computers by reducing the conversion effort."*



XLT 86, an 8- to 16-bit assembly code translator, is now available.

Programs translated by XLT86 run on both CP/M-86™ and MP/M-86, Digital Research's 16-bit single- and multi-user operating systems. With a current customer base of over 300,000 users, Digital Research is providing a strong growth path for CP/M OEMs and software vendors who want to enter the 16-bit market, and for end users who want or need to upgrade their computer capability.

XLT86 is available immediately. It operates on any 8-bit CP/M or MP/M™ system, or under the VMS operating system for use on Digital Equipment Corporation VAX series mini-computers. The CP/M version is priced at $150. The VAX version sells for $8,000.

For more information, contact Curt Geske at Digital Research, (408) 649-3896. To order XLT86, use the enclosed form.

Digital Research Has CP/M-86™ for IBM Displaywriter

Digital Research Inc. announced recently that it will market a version of CP/M-86 to run on the Displaywriter, IBM's dedicated word processing system.

CP/M-86 is a higher performance, 16-bit version of CP/M, the 8-bit operating system developed by Digital Research that is the de-facto industry standard operating system for microcomputers.

The Displaywriter is IBM's major entry into the word processing market.

Even though the Displaywriter is a word processor, it has all the features of a general purpose microcomputer, except a general purpose operating system, according to Bill Smale of the Marketing Group.

The IBM word processing software contains its own operating system. *"This operating system is not directly available to the user. It must be made available to make the Displaywriter a general purpose microcomputer,"* says Smale. *"In addition, you must have the application software to go with it. CP/M-86 will open up a wide variety of application software to users of the Displaywriter."*

Digital Research plans to market CP/M-86 for IBM's Displaywriter independently. Shipments should begin in mid-November, said Smale.

CP/M software writers will benefit from the availability of CP/M-86 on the Displaywriter. *"This will open up a whole new customer base for the Independent Software Vendor writing application software for CP/M-86,"* Smale said. Coupled with Digital Research's Independent Software Vendor Plan, the Displaywriter product offers another marketing opportunity to the software writer.

CP/M-86 is designed for Intel's 8086 and 8088 16-bit processors. With extended address space, CP/M-86 retains the file format of CP/M for compatibility.

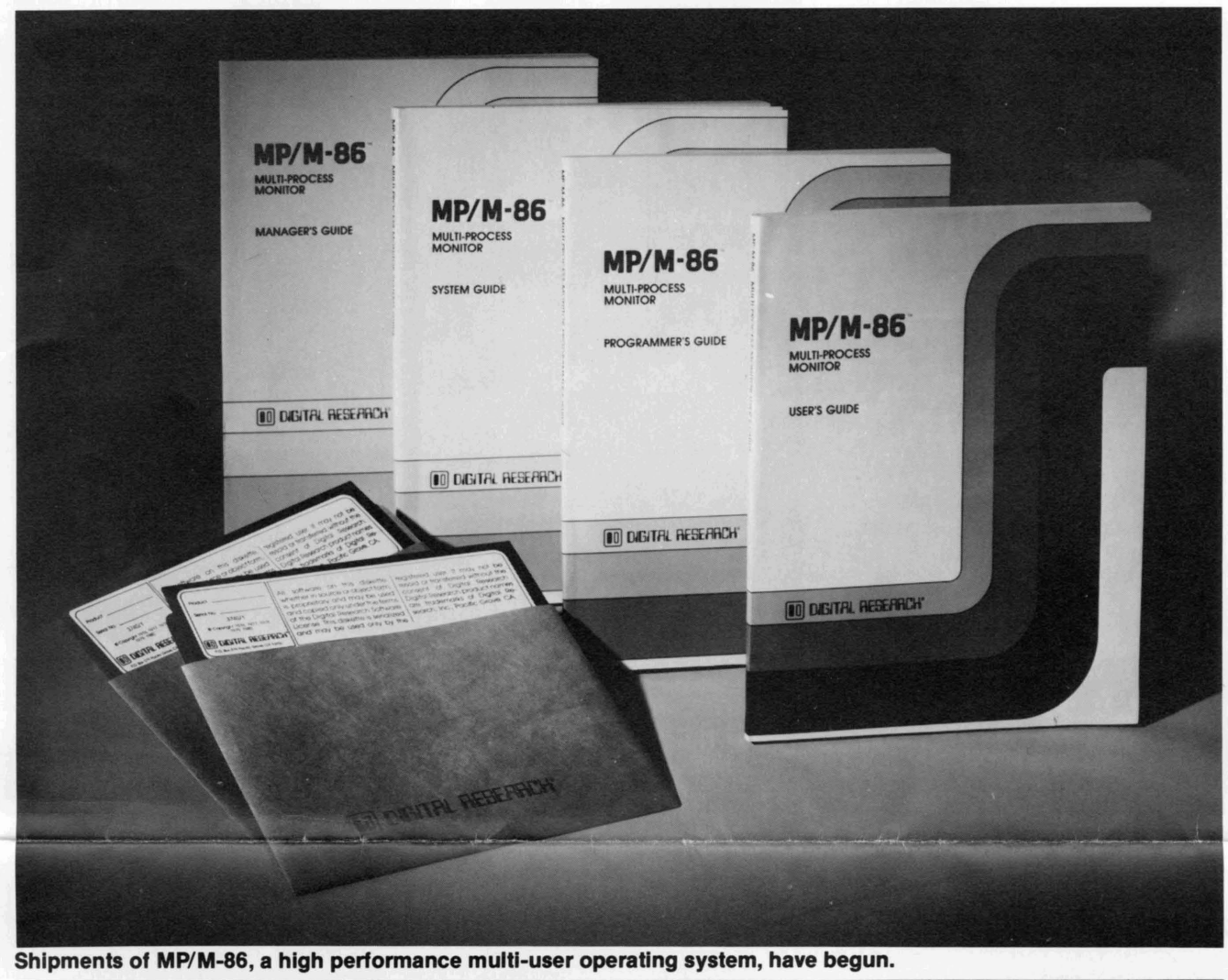
For information about CP/M-86 for the Displaywriter, write to the Marketing Group at Digital Research.

PRODUCT UPDATE

MP/M-86™ Operating System Now Being Shipped

First shipments of MP/M-86 have begun, according to director of marketing John Katsaros. MP/M-86 is a high performance multi-user operating system based on the CP/M and MP/M II operating systems for 8-bit microcomputers. MP/M-86, however, adds new features that take advantage of the 16-bit microprocessor's increased power, Katsaros said.

"MP/M-86 is the most powerful operating system to be made available for the 16-bit microcomputer. Its state-of-the-art queue system and high speed multi-tasking kernel, combined with its efficient use of memory give MP/M-86 users a fast operating system for business and scientific applications," Katsaros explained. *"The compatibility of MP/M-86 with both the 8-bit CP/M and the 16-bit CP/M-86 operating systems allows existing application programs to be easily converted to the new system, making the world of CP/M based software quickly and economically available to the MP/M user."*



Shipments of MP/M-86, a high performance multi-user operating system, have begun.

MP/M-86 is designed for multiple users in a multi-tasking real-time environment. Its shared code facility allows multiple users to execute programs with only one copy of the object code resident in main memory. Other features include file and record lock-out, software pipes, synchronization and communication between multiple tasks. The Terminal Message Processor allows a user to define a customized operating environment within the MP/M-86 structure. Customization for various hardware configurations is simplified through easy modification of the I/O drivers.

MP/M-86 maintains full compatibility with the CP/M-86 single-user operating system. CP/M-86 programs can be operated immediately under MP/M-86. MP/M-86 will support networking capabilities through CP/NET™, the Digital Research network operating system. MP/M-86 is compact and efficient, allowing a maximum of space for user programs. Because the file system formats of MP/M-86, CP/M-86, CP/m and MP/M II are compatible, conversion from 8-bit single-user application programs running under CP/M to multi-user 16-bit applications is greatly simplified.

For more information, write to the Marketing Group at Digital Research.

MP/M Offers Record, File Locking and Password Protection for Multi-user, Multi-task Systems

continued from page 1

storage each, for total on-line storage of 8 gigabytes.

MP/M II can manage up to 400K bytes of RAM. Since the nucleus of the operating system requires only 16K bytes, the remainder can be switched in 48K banks among eight users.

MP/M II files are fully compatible with CP/M files. The MP/M II file system, however, allows larger files than CP/M—up to 32 Mbytes. Each file can contain two date and time stamps, to show the date and time of file creation and last access or update. Additionally, MP/M II supports CP/NET, Digital Research's network operating system that allows users to interconnect multiple microcomputers, share disks and other peripherals and provide electronic mail capability.

With MP/M II, changing tasks requires only 600-900 microseconds. The interrupt mechanism is disabled for less than 150 microseconds; thus high priority interrupts may be serviced in a timely manner.

MP/M II can process error conditions in three modes, thus enabling application programs to provide users with more specific error handling information. First, it can simply print an error message and terminate the application program. Or it can print an error message and return an error code to the application program for further processing. Or, finally, it can simply return the error code to the application program for further processing.

MP/M II is a multi-user, multi-tasking operating system for 8080, 8085 and Z-80 processors. It features record and file locking, as well as optional "password protection" for data security.

MP/M II is distributed on a standard format IBM single density 8-inch floppy disk. Additionally, MP/M II is supported by Digital Research's Software Performance Reporting System to provide prompt responses to technical problems associated with MP/M II.

An upgrade kit is available to convert MP/M™ 1.0 systems to MP/M II systems. If you own an MP/M 1.0 system and want to be upgraded to the latest version, the upgrade fee is $150. If you received MP/M 1.0 with your hardware, you should contact your hardware supplier for the latest version. If you bought MP/M 1.0 directly from us, contact us for ordering information about the upgrade kit. Keep in mind, you should have assembly language programming experience if you want to install the upgrade yourself.

MP/M II is priced at $450 for single purchases. For further information about MP/M II, contact the Marketing Group at Digital Research.

Enhanced TEX Creates Tables of Contents & Indexes

A faster, more powerful version of Digital Research's text formatting program is now available. Called TEX Version 2.1, its major function is to prepare documents for printout under CP/M.

TEX 2.1 is an enhanced edition of TEX 2.0. To simplify the production of longer documents, it automatically numbers pages and creates tables of contents and indexes. TEX 2.1 also allows users to link together up to three files, chain files or insert a file in the middle of the text from the user console or from a second source file.

TEX 2.1 processes files produced by the standard CP/M editor according to interspersed commands for automatic pagination, margins, headings, paragraphing, and right justification.

TEX 2.1 also offers special features for owners of Diablo 1640/1650 printers designed for word processing, including proportional spacing, shadow printing, backspacing, super- and sub-scripting and underlining.

TEX 2.1 is compatible with all versions of CP/M and MP/M and supports input files prepared for TEX 1.0. It requires a 20K CP/M, MP/M or CP/NET system. Indexing capability requires a 48K system.

For more information about TEX 2.1, write to the Marketing Group at Digital Research. To order TEX 2.1, use the enclosed form.

Engineer's Self-Teaching Exercise Leads to Selection of CP/M As Management Tool at Finnegan-MAT Corporation

What began as an engineer's self-teaching exercise led to the acceptance of Digital Research's CP/M as the standard operating system for microprocessor-based computer systems at a major manufacturer of scientific instruments.

Back in 1977, Roger Samdahl, who is now engineering manager at Finnigan-MAT Corporation in Sunnyvale, Calif., decided that it was time to learn about microprocessor-based computer systems. At that time, he was working at Syntex, a manufacturer of medical instrumentation. Instead of taking courses or poring over the maze of current literature, Samdahl decided that the best way to learn about microprocessor-based systems was to build one.

Samdahl really had no specific applications in mind for his computer when he started work. He was not at all familiar with microprocessor-based systems and his only concrete goal was to learn. When it came time to choose an operating system, he wanted one that offered the greatest flexibility.

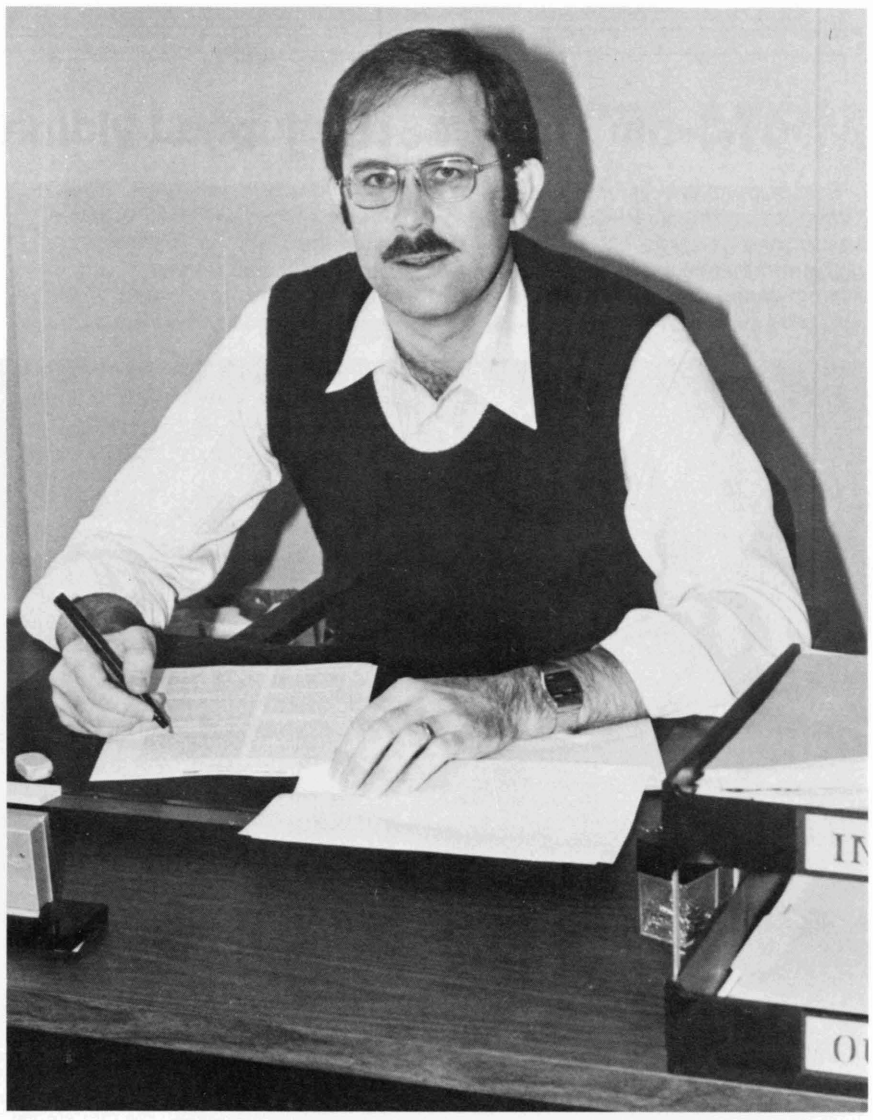
"I chose CP/M based on its reputation, after reading users' descriptions of it," said Samdahl. *"I particularly wanted access to the largest possible body of software, and one of CP/M's strengths was the range of software that was available to run on it."*

Another advantage of CP/M, according to Samdahl, is that it is straightforward and simple to use. After some initial difficulties getting CP/M up and running—which Samdahl attributes mostly to his own inexperience—CP/M worked consistently and reliably, said Samdahl.

> ***"I particularly wanted access to the largest possible body of software, and one of CP/M's strengths was the range of software that was available to run on it."***

Three years ago, Samdahl left Syntex to join Finnigan-MAT, a company that manufactures scientific instruments for analytical chemistry markets such as pollution control. He brought CP/M with him.

"When I came to Finnigan-MAT, there was almost no microprocessor activity in the company at all," said Samdahl. *"Most of our systems rely on minicomputers. I decided that we could benefit from the use of microprocessor techniques in the engineering environment, both for management-related functions and for the replacement of some of the discrete logic used in our instruments."*



Roger Samdahl

And, once again, Samdahl chose CP/M as the operating system.

One of Samdahl's first projects was to build a development system for preparation of microprocessor code and the generation of EPROMS. Product development is still the primary application for microprocessor-based systems at Finnigan-MAT, according to Samdahl, but the fastest growing use for the CP/M-based systems is in a variety of support activities, including word processing, program planning and management, and project cost analysis. As engineering manager at Finnigan-MAT, Samdahl uses a CP/M-based microcomputer as a professional management tool. For example, all of the company's engineering change orders are controlled with a CP/M-based system.

The key to the acceptance of CP/M at Finnigan-MAT, according to Samdahl, is that it satisfies both of the company's needs for microprocessor-based systems—general management activities *and* the generation of programs and support hardware used in product development.

"We've looked at other systems that provide one or the other," said Samdahl, *"but CP/M has the flexibility to let us do both."*

Today, Finnigan-MAT has seven microprocessor-based systems with CP/M in use in engineering and, according to Samdahl, more are on the way. ■

TECHNICAL NOTES

Control Characters in Submit Files
CP/M 2.2, Submit Patch #1

SUBMIT does not allow any control characters in .SUB files. Certain control characters are recognized by SUBMIT when preceded by an up arrow. The two characters "↑z" should be interpreted by SUBMIT as a "control Z".

The following procedure using DDT will fix this problem. Make sure the listing shown here matches yours before patching. ■

(submitted by Phil Nelson)

```
A>ddt submit.com
DDT VERS 2.2
NEXT PC
0600 0100
-1441
  0441    SUI     61
  0443    STA     0E7D
  0446    MOV     C,A
  0447    MVI     A,19
  0449    CMP     C
  044A    JNC     0456
  044D    LXI     B,019D
  0450    CALL    02A7
  0452    JMP     045E
  0456    LDA     0E7D
  0459    INR     A
-s442
0442 61 41
0443 32 .
-g0

A>save 5 submit.com
A>
```

Where Are You?

If you have a new address, or if you are planning to relocate soon, please notify us of your new location. We want to keep you up-to-date on our activities. Please fill out the coupon below with your name, address and CP/M serial number so we'll know where to contact you. Mail to: Editor, *Digital Research News*, Digital Research Inc., P.O. Box 579, Pacific Grove, CA 93950.

Name _____

Address _____

City/State _____

Zip _____

Serial No. _____

Return to Editor, *Digital Research News*, Digital Research Inc. P.O. Box 579, Pacific Grove, CA 93950.

SERVICES & MARKET

CP/M-86 Captures Leading Share in 16-Bit World Market

Computer manufacturers, the press and other industry observers recognize Digital Research's CP/M as the leader in 8-bit operating systems. Hewlett-Packard, Wang and Xerox have all introduced CP/M-based microcomputers, and smaller companies such as Durango have made CP/M available as an option to their own proprietary operating systems on their small business systems. Now, the industry is moving into the 16-bit realm, and Digital Research is determined to move right along with it.

IBM recently announced its 16-bit personal computer, which will use CP/M-86 as its alternate operating system. With this long-awaited move, IBM joins Piiceon, Artelonics and Sirius Systems, which have all introduced 16-bit computers with CP/M-86 in the last six months.

Can CP/M-86 achieve the same widespread acceptance in the 16-bit world as CP/M has in the 8-bit world? More than 400 different computer manufacturers use CP/M, prompting *Business Week* to hail it as the de-facto standard of 8-bit operating systems. As yet, only a few computer manufacturers use CP/M-86. But behind the raw number is a more revealing statistic. *"There are only a few hundred 16-bit machines on the market today,"* said John Katsaros, director of marketing. *"We estimate that about 25 percent of the 16-bit installations use CP/M-86. That makes it the most widely used 16-bit microcomputer operating system."*

Not a bad start for CP/M-86, and Katsaros expects that as more manufacturers build 16-bit machines, the overwhelming choice for an operating system will be CP/M-86.

Why? *"When a manufacturer uses CP/M-86, its customers are assured of a wealth of application software."* said Katsaros. *"It takes only minor modifications to translate programs from 8-bit to 16-bit machines, if the programs are written for CP/M. Plus our new program translator, XLT86, simplifies this conversion."*

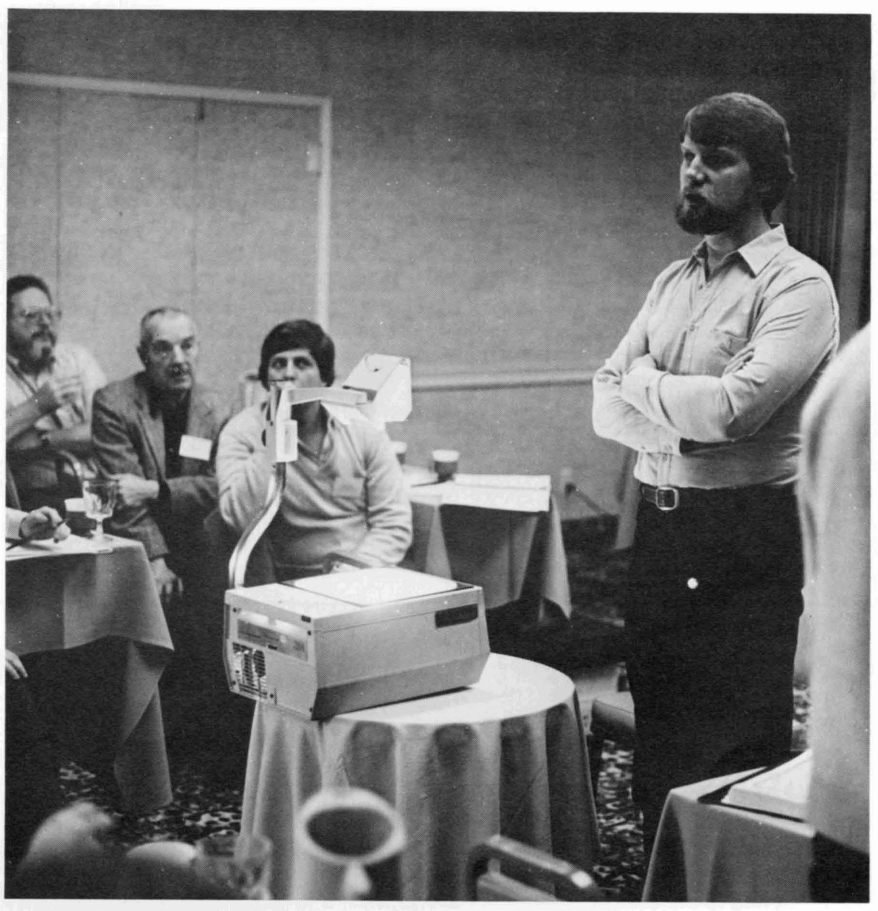
And, more than 300,000 users are already familiar with the command structure of CP/M, noted Katsaros.

> ***". . . about 25 percent of the 16-bit installations use CP/M-86. That makes it the most widely used 16-bit micro-computer operating system."***

With a leading market share in the emerging 16-bit world, Digital Research is confident that it can move its 8-bit market base into the 16-bit market. IBM's recent announcement of its personal computer with CP/M-86 only helps, noted Katsaros.

"IBM has just legitimized the 16-bit market," he said, "and I believe that we'll see much more 16-bit hardware emerging in the near future."

Digital Research will keep you informed of all new 16-bit hardware using CP/M-86 as it becomes available.



Gary Kildall, president and founder of Digital Research, presents highly technical overviews of CP/M and CP/M-86 operating systems for OEMs and system integrators.

Separate Seminars Now Offered for Digital Research's ISVs and OEMs

Digital Research now offers two distinctly different technical seminars. For the Independent Software Vendor who writes and markets CP/M-compatible application programs, the company sponsors the ISV Seminar, which is part of Digital Research's Independent Software Vendor Support Plan. For OEMs and system integrators, Digital Research offers an Operating Systems Seminar.

Operating Systems Seminar

This three day seminar is geared specifically toward helping OEMs and system integrators understand the technical capabilities of Digital Research's family of operating systems and software tools. Gary Kildall, president and founder of Digital Research, presents a highly technical overview of both CP/M and CP/M-86. Tom Rolander, operating systems developer, responsible for both the MP/M and CP/NET projects, discusses MP/M and CP/NET.

One evening during each seminar is dedicated to a roundtable discussion, in which attendees are encouraged to express their expectations about operating systems. Digital Research uses this data to help develop its new products, policies, licensing and support practices. Cost of the three day session is $500 and includes breakfast and lunch each day.

ISV Seminar

This seminar is offered through Digital Research's Independent Software Vendor Support Plan, a program designed to help companies write and market CP/M-compatible application programs. The seminar covers technical aspects of writing programs to operate under CP/M, including PL/I-80, CBASIC and CB80 programming techniques. Additionally, Digital Research's lawyer Gerry Davis discusses software protection, trademarks, copyrights, process patent law and software licensing. Like the Operating Systems Seminar, one evening is dedicated to a roundtable discussion. Finally Digital Research's marketing and technical publications groups cover advertising, small business administration, marketing and technical writing.

Through the ISV Seminars, Digital Research hopes to encourage the proliferation of quality application software for Digital Research operating systems. The ISV Seminars are supplemented by other services, such as helping ISVs tell the world about their software, and improving communication between vendors, OEMs and Digital Research. To this end, Digital Research produces a quarterly newsletter called the ISV FORUM, and publishes a catalog of CP/M-compatible software.

More than 1500 people have joined Digital Research's ISV plan. There is no membership fee. Cost of the seminar is $500; it includes breakfast and lunch each day.

For more information or dates about upcoming seminars, contact Lori Forrest, P.O. Box 579, Pacific Grove, Calif., 93950.

Who to Call for Support At Digital Research

We at Digital Research want to give you the best service possible. In our efforts to assist you, we would like to describe the kinds of information available from our different departments, and share our policies regarding contacting DRI by telephone.

Marketing Department
(408) 649-3896

Technical Hot Line
(408) 375-6262

Answered during regular business hours

The Technical Hot Line is intended for use by registered Digital Research customers to answer specific questions about Digital Research products. If you are not registered, or if your question is in regard to sales, licensing, distribution or availability of DRI products or compatible application programs, please call the Marketing Department, or our foreign representatives.

When calling our Technical Hot Line, please be aware of the following:

- DRI does not make recommendations regarding the software or hardware products of any other companies.
- Before calling, be prepared to give your CP/M or MP/M serial number.
- Before calling, please carefully formulate a specific question that can be answered promptly.
- DRI does not provide technical support for a BIOS or XIOS written by another company, unless attempts have been made to resolve the problem with that company before calling Digital Research.
- We are happy to provide general information on how to use DRI software, but we cannot debug application programs or provide consulting advice on how to write them.
- If you have a suspected bug, please send it to us in documented form, without a call to the Hot Line.
- Please limit your calls to the Hot Line for situations when you need an answer *right away*. If you can wait, please write your question down & send it in. We usually can reply within a week. Send to: *ATTN: Hot Line, Digital Research.*

Again, we encourage you to call us if you have a specific problem that can be solved easily over the phone. If not, write to us, and you will receive a prompt reply. We look forward to hearing from you.

CP/MINUTES

- COMDEX '81 was a huge success for Digital Research. We enjoyed meeting so many Digital Research users and discussing our products and plans with you. Our technical and marketing people appreciated your input and look forward to seeing you next year at future trade shows.
- Final documentation for CP/M-86 is now available. It is priced at $40.
- Digital Research no longer offers PL/I-80 and BT-80™ on Micropolis and Northstar formats. However, these formats are available through Micropolis and Northstar dealers.

LITERATURE

CP/M Compatible Software Catalog Now Available

If you're looking for CP/M compatible application software, or need to find out about companies that write and distribute it, then you should obtain a copy of Digital Research's new catalog, titled "CP/M Compatible Software." It lists more than 100 different companies that write CP/M compatible software. Furthermore, application programs are cross-referenced by application type, including programs for word processing, accounting, utilities, languages and vertical markets.

According to John Katsaros, director of marketing, *"This is the first professionally-produced publication available in the industry that lists in one place a multitude of different application programs that run under CP/M."*

The two-color, 24-page publication will be distributed through computer retailers, distributors, system houses and microcomputer manufacturers. The catalog is priced at $5.

If you write CP/M compatible software and would like to be included in the next catalog, write to Lori Forrest at Digital Research. She will send you an application form at the appropriate time.

To obtain copies, please use the enclosed order form.

Books About CP/M and PL/I Now Available

Several commercial publishers now offer books that introduce microcomputer concepts while tutoring readers about CP/M operation. These independently-produced publications have caught on very well. The interest in tutorials for the first-time user has been so strong that we have decided to offer these books to our customers through our own distribution channels. The books include:

- ***CP/M Primer,*** by Murtha and Waite, published by Howard Sams and Co., Inc., presents a theoretical approach. It describes concepts and history before presenting examples to try. Technical illustrations and lighter "cartoons" appear on nearly every page. The spiral binding lets the pages lay flat, and it contains a cut-out CP/M reference card. Price: $11.95.
- ***The CP/M Handbook with MP/M,*** by Zaks, published by Sybex, presents a practical approach. This book presents examples to try before explaining concepts. It describes MP/M and multi-user systems as well as standard CP/M utilities. Additionally, it contains a 50-page alphabetical command summary and troubleshooting hints. Price: $13.95
- ***Using CP/M,*** by Fernandez and Ashley, published by John Wiley and Sons, Inc., is "a self-teaching guide." It presents three or four tutorial paragraphs, then questions the reader for understanding. ***Using CP/M*** describes version 2.0 and standard utilities, and it contains a two-page command reference summary. Price: $8.95.
- ***Data Structures and PL/I Programming,*** by Augenstein and Tenenbaum, published by Prentice-Hall, is a text on advanced programming techniques using the PL/I language. This book is on PL/I, of which PL/I-80 is a subset. The text focuses on the use of advanced abstract data structures such as arrays, trees, linked lists, stacks, and their form in the PL/I programming language. ***Data Structures and PL/I Programming*** is written for the experienced programmer. Price: (hardcover) $25.95.

If one of these is the right book for you, please see the enclosed form for ordering information.

CP/M Compatible Software Available

by Sol Libes

CP/M has many advantages over other microcomputer disk operating systems, but perhaps most important is its huge public domain software base. Thanks to the efforts of the CP/M User Group (CP/MUG) and the Special Interest Group/M (SIG/M), more than 75 volumes containing well over 3000 programs are now in the public domain. Most of the software is in source code form, and is stored by the groups in special software "libraries" on 8-inch single density floppy disks. There are languages, application packages, utilties, games and much more, totalling about 15.5 Mbytes of software in all.

The purpose of this article is to identify CP/MUG and SIG/M, and to explain where to get information about the software that each group makes available through its libraries. The exclusive function of each of these groups is the gathering, editing, cataloging, production and distribution of public domain software.

CP/MUG

CP/MUG is operated as an adjunct of Lifeboat Associates, an international distributor of commercial software. Lifeboat operates the group with the assistance of the Chicago Area Computer Hobbyist Exchange (CACHE). CACHE edits and catalogs the software and compiles each volume while CP/MUG collects the software and produces and distributes the disks.

SIG/M

SIG/M is operated jointly by the Amateur Computer Group of New Jersey (ACG-NJ) and the New York City Amateur Computer Club (NYACC). These two clubs have a joint membership of close to 2,000, most using CP/M-based systems. SIG/M performs all of the functions of collecting, editing and distribution of its software.

Specific Software

If you are interested in learning what specific software is available through these two groups, you can purchase a printed catalog. The CP/MUG library catalog is available from Lifeline Publishing Corp., 1651 Third Ave., New York, NY 10028, (212) 722-1700. It costs $6 domestic, $11 outside U.S. Also, a 20-page monthly newsletter is published to provide information about Lifeboat and CP/MUG software. The newsletter is priced at $18 per year in the U.S. and Canada; $40 elsewhere.

The New York Amateur Computer Club (NYACC) publishes a 200-page catalog containing the listings of both the SIG/M and CP/MUG libraries. It is priced at $10 domestic; $13 outside U.S. The catalog is available from NYACC-CP/MUG, Box 106, Church Street Station, New York, NY 10008.

From time to time, SIG/M publishes a column on many of the remote dial-in CP/M systems that can be read at no charge, and is also published in the NYACC and ACG-NJ newsletters. A few of the systems even carry the complete catalog on-line. However, you should purchase a catalog because it takes a very long time to down-load the catalog information.

Finally, *MICROSYSTEMS* magazine keeps readers informed on the activities of both groups. A one-year subscription to *MICROSYSTEMS* costs $10 U.S.; $15 Canada/Mexico; $25 foreign. You can write to *MICROSYSTEMS* at Box 1192, Mountainside, NJ 07092.

How to Obtain Software

Both CP/MUG and SIG/M groups have similar operating policies. They prefer to distribute the disks to computer clubs, who then are responsible for copying the software for their local areas. Neither group is really prepared to deal directly with individual users. For example, SIG/M is made up of a group of about a dozen hobbyist volunteers who do all the work on their own home systems. Hence, SIG/M will furnish disks to individuals only if there is no distribution point convenient to the user. When SIG/M disks are copied at meetings of the ACG-NJ or NYACC, a donation of $1 is requested.

When ordering disks from SIG/M or CP/MUG, allow three to five weeks for delivery. CP/MUG disks are priced at $8 each in the U.S., Canada and Mexico; $12 overseas. SIG/M disks are priced at $6 each in the U.S., Canada and Mexico; for international orders, add $4/disk. Savings on postage and handling are passed on from SIG/M when more than one disk is ordered.

Both groups furnish disks for North Star systems (double density or single density). When using DD, one volume equals two disks. When using SD, one volume equals four disks. Finally, the SIG/M can furnish disks for Apple, (single density), Cromemco (5-1/4- and 8-inch), Micropolis Mod-II double density 5-inch, and TRS-80® I/II/III forms.

To order SIG/M disks, write to Box 97, Iselin, NJ 08830. For CP/MUG disks, write CP/MUG, 1651 Third Ave., New York, NY 10028.

If you would like to hear more about other CP/M user activities, write to the Digital Research Marketing Group. If your user group is doing something that may be of interest to other CP/M users, be sure to tell the Digital Research Marketing Group about it.

Sol Libes is the editor of MICROSYSTEMS, *the CP/M and S-100 users' journal. Digital Research is not involved in any sale of software in the public domain.*

Active CP/M Users' Groups

A number of CP/M-related users' groups and special interest groups are now active. To keep you informed, this is our list of active groups:

California:

North Orange Computer Club
P.O. Box 3616
Orange, CA 92665

SMUG (Sacramento Microcomputers Users Group)
Dave Minton
P.O. Box 161513
Sacramento, CA 95816
A CP/M users' group.

Valley Computer Club
Sy Lieberman
P.O. Box 6545
Burbank, CA 91510
A CP/M users' group.

Colorado:

Denver Amateur Computer Society
Jim Clark
P.O. Box 1235
Englewood, CO 80150

Illinois:

CACHE (Chicago Area Computer Hobbyists Exchange)
Jim Mills
824 Jordan Place
Rockford, IL 61108
A CP/M users' group.

Massachusetts:

Boston Computer Society
Jonathan Rotenberg
Three Center Plaza
Boston, MA 02108
A North Star CP/M users' group.

New Jersey:

ACG-NJ (Amateur Computer Group - New Jersey)
Sol Libes
1776 Raritan Road
Scotch Plains, NJ 07076
A special interest CP/M group.

SIG/M (Special Interest Group)
P.O. Box 97
Iselin, NJ 08830
A CP/M special interest group.

New York:

CP/MUG (CP/M Users' Group)
Marcia Coltun
1651 Third Avenue
New York, NY 10028
A CP/M users' group.

DIGIAC
175 Engineers Road
Smithtown, NY 11787
An MP/M™users' group.

Rhode Island:

Rhode Island Computer Hobbyists
Emilio Iannuccillo
P.O. Box 599
Bristol, RI 02809

If you know of other groups, please send us their names, addresses, contacts and how to join, so we can refer CP/M users to them.

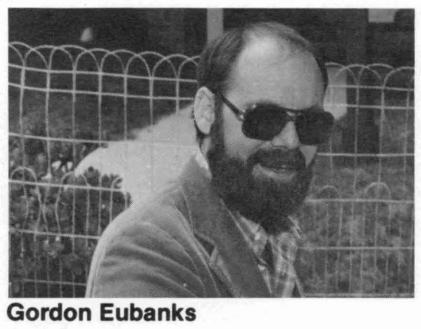
Digital Research Acquires Compiler Systems; Will Now Provide the Microcomputer Industry with One-stop Shopping for Total Systems Support

continued from page 1

strong financial commitment to R&D, will allow us to provide a number of languages that would otherwise compete against each other in the market."

"Like hardware, languages have inherent strengths and weaknesses in different applications," Eubanks said. *"We feel it is essential to provide our customers with the best language possible for a particular application. We intend to do just that."* He added, *"Our first objective will be to ensure that we have complete support for 8080- and 8086-based systems. Then we will certainly expand into other processors and operating systems as demand for the products is generated."*

Currently, Eubanks is working with John Katsaros, Digital Research director of marketing, to develop marketing and sales strategies for the new division. *"Our major marketing thrust will be in three areas,"* Katsaros said. *"These include hardware OEMs; software distributors; and independent software vendors, who write and market software programs unbundled from hardware."*



Gordon Eubanks

Digital Research will keep you informed about the progress of the new division.

DIGITAL RESEARCH® Order Form

Product Description	Media Formats 8" Diskettes: Single Density	Double Density	Diskette Only: Single Density	Double Density	Documentation Only Price	Documentation Description	Order Details
Operating Systems							
CP/M® 2.2	$150	$200	$135	$185	$25.00	Seven manual set includes: CP/M Alterations, Interface, Dynamic Debugging Tool, Context Editor, Assembler, Features & Facilities and User's Guides.	NA
CP/M SBC 80/20	$200	NA	$185	NA	$25.00	Same as CP/M 2.2 Documentation.	System & Disk Only include ROM.
CP/M-86™ 1.0	$250	NA	$220	NA	$40.00	Five manual set includes: CP/M-86 System and Programmer's Guides. CP/M 2.2 User's, Features & Facilities and Context Editor.	PROM set available for $100.
MP/M II™ 2.0	$450	NA	$420	NA	$40.00	Five manual set includes: MP/M II User's, Programmer's and System Guides. LINK-80 Operator's Guide and MAC Language Manual and Applications Guide.	LINK-80 Guide and MAC manual included with system only.
MP/M-86™ 2.0	$650	NA	$610	NA	$50.00	Three manual set includes: MP/M-86 User's, Programmer's and System Guide.	NA
CP/NET™ 1.0	$200	NA	$195	NA	$15.00	CP/NET User's Guide.	NA
Languages and Programming Tools							
PL/I-80™ 1.3	$500	$500	$475	$475	$35.00	Five manual set includes: PL/I-80 Applications, Language and LINK-80 Operator's Guides. PL/I-80 Command Summary and MAC Language and Applications Guide.	MAC manual included with system only.
CBASIC™ 2.8	$150	$150	$130	$130	$30.00	CBASIC Reference Guide	NA
CBASIC-86™ 1.0	$325	$325	$305	$305	$30.00	CBASIC/86 Reference Manual	NA
CBASIC-16™ 1.0	$325*	NA	$305*	NA	$30.00	CBASIC/16 Reference Manual	*Media Format-DC BASE 300A Data Cartridge Note: You must specify hardware.
CB-80™ 1.1	$500	$500	$480	$480	$30.00	CB80 Language Manual	NA
MAC™ 2.0	$ 90	$115	$ 80	$105	$15.00	MAC Language & Applications Guide	NA
RMAC™, LINKLIB & XREF 1.1	$200	NA	$185	NA	$25.00	Two manual set includes: LINK-80 Operator's Guide, MAC Language & Applications Guide.	NA
LINK-80™, PLILIB, LIB & XREF 1.3	$100	NA	$ 95	NA	$10.00	LINK-80 Operator's Guide	NA
BT-80™ 1.0	$200	NA	$185	NA	$25.00	BT-80 Reference Guide	NA
XLT86™ 1.0	$150	NA	$145	NA	$10.00	XLT86 User's Guide	XLT86 is available in the VAX VMS version for $8000.00.
Utilities							
SID™ 1.4	$ 75	$100	$ 70	$ 95	$10.00	Two manual set includes: SID User's Guide and SID Command Summary.	NA
ZSID™ 1.4	$100	$125	$ 95	$120	$10.00	Two manual set includes: SID User's Guide and ZSID Command Summary.	NA
TEX 2.1	$100	$125	$ 95	$120	$10.00	TEX User's Guide	NA
DESPOOL™ 2.0	$ 50	$ 75	$ 45	$ 70	$ 2.50	DESPOOL Operator's Guide	NA
New Products: IBM Displaywriter™ Compatible Products							
CP/M-86 DW 1.0	$325	NA	$285	NA	$50.00	CP/M-86 DW documentation	These products are designed for a Displaywriter with the following configuration: Electronic Module, Display, Disk Drive and Printwheel Printer.
CBASIC-86 DW 1.0	$325	NA	$305	NA	$30.00	CBASIC/86 Reference Manual	
CP/M-86 DW & CBASIC-86 1.0	$600	NA	$530	NA	$80.00	Two manual set includes: CP/M-86 DW documentation and CBASIC/86 Reference Manual.	

Order Details
All single density diskettes are IBM 3740 soft-sectored. All double density diskettes are Intel MDS 800.

DIGITAL RESEARCH® NEWS

Digital Research News is published by Digital Research, Inc. for customers everywhere. Address all correspondence to Editor, *Digital Research News*, **P.O. Box 579, Pacific Grove, CA 93950**. (408) 649-3896.

Bulk Rate
U.S. Postage
PAID
Permit No. 161
Pacific Grove, CA

MP/M-86™ Now Being Shipped—See Page 3 For Details.

Catalogs & Books

CP/M Compatible Software Catalog lists over 100 Independent Software Vendors (ISVs) who write CP/M compatible software. Your guide to accounting packages, word processors, languages, utilities and more.	$ 5.00 (Must be pre-paid)
CBASIC Software Directory. A listing of software vendors that market products written in CBASIC.	$ 7.50
OSBORNE CP/M User Guide by Hogan	$12.95
The CP/M Handbook with MP/M by Zaks	$13.95
The CP/M Primer by Murtha & Waite	$11.95
Using CP/M by Fernandez & Ashley	$ 8.95
Data Structures & PL/I Programming by Augenstein & Tenenbaum	$25.95

Ship To:

Name_____

Company _____

Address_____

City_____

State_____ Zip _____

Requester's Name _____

Phone ( )_____ Ext. _____

Bill To:

Name_____

Company _____

Address_____

City_____

State_____ Zip _____

Requester's Name _____

Phone ( )_____ Ext. _____

Shipment Method:

_____ UPS (for continental USA orders)

_____ Mail Service (for International orders)

_____ Air Freight (by request)

If you request Air Freight, the shipping charges are due upon delivery.

Shipping Charges:

******$5.00 for Canada and Mexico, $10 for overseas.
If you include payment (check, money order or credit card), we will pay the UPS charges on continental USA orders.

Payment Method:

All international orders must pre-pay in U.S. dollars. (Bank transfers may be made to Bank of America, Pacific Grove, California. Account #35-08558-00133.)

_____ Check enclosed

_____ C.O.D.

_____ MasterCard

_____ Visa

Name on Card_____

Account Number_____

Expiration Date _____

Signature_____

Phone Number_____

Bill my company P.O. Number _____

******All Purchase orders will be billed actual shipping charges.

Authorized signature_____

Title _____

Date_____

Qty.	Product Description (please specify single or double density)	Unit Price	Total Price
	CP/M Compatible Software Catalog	$5.00	
		Subtotal	
		California shipments add 6% sales tax.	
		****Shipping**	
		Total Order	

The prices shown are USA domestic prices. International prices are 10% higher for systems, and 20% higher for documentation.