

november, 1981



the

DATA DOMAIN

inc.

# NEWSLETTER

This issue features the NEC microcomputer, the Apple Computer Family System, a special offer on a complete Televideo business system, books on computing, several Apple programs (The Inspector and The Correspondent), and news about the Data Domain Christmas software sale.

John V. Lombardi, editor

## RAY'S REPORT

During the next decade, the success of microcomputing hardware will become increasingly dependent on software availability and quality. Excluding the family personal computer purchased primarily for games, the name of the game in buying and selling microcomputers will be to match the hardware to the software selected. Customers will select the software best suited to a given job and then select the microcomputer that can best execute that software.

Careful purchasers of microcomputing equipment and programs need to be aware of developments in software so that the equipment and programs they buy remain current for a reasonable period and can be updated as improvements appear. CP/M, the operating system (a set of software programs) for microcomputers, is here to stay for as long as the market will accept it or its various derivatives, and the number of manufacturers of microcomputers that have accepted the CP/M standard is very large, including the Apple II.

Similarly, Microsoft's Basic languages, in a variety of versions, are pervasive throughout the microcomputer industry. What applications software isn't done in Microsoft Basic is done in some version of C-Basic, and Digital Research, the company that produces CP/M, has purchased C-Basic with the purchase outright of C-Basic's company, Compiler Systems, Inc.

The result of all this is that with virtually every system on the market able to operate under the CP/M operating system (including Apple II with the Softcard accessory) the choice of a machine has become subordinated to the choice of a dealer, a manufacturer, a set of software, and, of course, the user's budget.

This has had a profound impact on the relationship between dealer and manufacturer. For the first time since the beginning of the microprocessor revolution, the manufacturers must depend on their dealers to advise customers about the software-hardware relationship. This is because the differences between the various machines operating under CP/M are very subtle and often confusing. Advertisements in national magazines cannot clearly differentiate these subtle differences which for some applications may be irrelevant and for others may be critical. Consequently, manufacturers are discovering that the dealer's customers are more interested in following the advice of the dealer than in believing advertised claims of computer companies.

We have always observed that The Data Domain customer is more a Data Domain customer than an Apple or Vector Graphics or Televideo or NEC customer, and the manufacturers' reaction to this situation is now becoming clear. Apple, for example, has sent its corporate moguls all over the country to improve relations with its dealer network. Vector Graphics scrambles to lock-in Sears and other potential big accounts.

And what do we dealers think about all this? Well, I can't speak for others, but I'll tell you what equipment I'd like to carry as soon as possible to be able to fully serve The Data Domain customer base. The IBM personal computer, the Xerox 820, the NEC (or one of the other big Japanese brands), Apple, Cromemco, and Osborne. With these machines I can meet any of the price/performance demands

we've run into. I have left out the Alpha Microsystems computer, because it is a unique machine having a full 16-bit system with power beyond any of the smaller systems considered above. Given continued corporate support, it will be difficult for any of the 8-bit micros to compete with the Alpha Micro when it comes to price/performance and systems software. Similarly, the 8086-based, 68000-based, and Z8000-based 16-bit micros can and may get better than the Alpha Micro, but that development is at least a year away, and I'll worry about evaluating new 16-bit machines when the time comes.

The summary of this story for consumers of microcomputers is as follows: figure out what you want the microcomputer to do, have your dealer help you select the best software to accomplish this task, and then work with your dealer to match the microcomputer to the software within the constraints of your budget.

Ray Borrill

#### FROM THE APPLE-PIT

Well, this column has appeared in several issues of The Data Domain Newsletter now and for you readers who may have missed the first issue and might take exception to the column title, I probably should repeat an explanation. I know that Apples don't have pits, but somebody was already using the title "From the Apple-Core."

If you have read the November issue of Byte magazine, you have probably already seen the latest example of why it is so great to own an Apple computer. If you haven't seen the issue, or missed the article, I am referring to a new product announcement that appeared on page 505. The announcement describes a new accessory card available to plug into a peripheral slot of your Apple-II. The card contains the following: an 8088 processor (that has 16 bit internal architecture with 8 bit I/O) clocked at 5 mhz; 64K of on-board RAM with parity checking, expandable to 128K; 2K of on-board ROM, expandable to 8K; an external bus connector that allows a total of 384K of RAM; a real-time clock interrupt for multi-tasking; provisions for the 8087 math processor; software support of CP/M-86, MP/M-86, and Pascal 4.0. The compatibility with CP/M-86 means that the card will be able to use software that is developed for the IBM Personal Computer. The card will not be inexpensive at \$980, but I find it fascinating to find that my Apple-II has the flexibility to emulate IBM's new computer before IBM really has time to get the product distributed to all dealers.

The impact of the 64K RAM chip has found its way to Apple. There are at least two sources now making 64K RAM cards for the Apple-II. One of these, Legend Industries, has some very interesting support software for their card. Their 64K card is not slot dependent and multiple cards (at \$349 each) can be plugged into Apple-II slots. With the software that Legend Industries has made available, it is possible to download the contents of a disk into two RAM cards. The software then allows the two cards to emulate a phantom disk drive with the normal DOS commands honored, but at memory speeds. This technique can be used on a reduced scale with one card emulating half of a disk. Just think of the possibilities for rapid searches and sorts.

John Prather

#### THE NEC MICROCOMPUTER SYSTEM

The Data Domain now has available a NEC microcomputer system. Called the PC-8000, the fully configured system consists of a keyboard, an I/O unit, a dual mini-disk unit, and a monitor. Priced at a level competitive with most CP/M microcomputers and with fully configured Apple II machines, this is a very impressive computer.

The keyboard can be moved about and has 82 keys that include a numeric keypad and five user-programmable function keys. Up to 10 different user-defined routines can be activated using the function keys and the shift key. N-key rollover input allows high-speed typing for wordprocessing and other professional uses.

This computer comes with 24K bytes of Read Only Memory and 32K bytes of Random Access Memory. This can be expanded in the I/O unit up to 64K of RAM. The screen will accept formats of 20 or 25 lines of 36, 40, 72, or 80 characters per line with adjustable scrolling window. A powerful built-in editor includes four-way cursor control, character insert and delete, and more. A single command puts the NEC into terminal mode. The machine also has a very large standard character set of 248 symbols. This includes complete English upper and lower case plus the rest of the ASCII character set. In addition there are many Greek characters, solid and linear shading increments, arcs, dots, superscript numbers, dotted lines, underlines, and playing card symbols. Moreover, this machine can display color text and color graphics together on the same screen. The resolution of the color graphics is 160 X 100 in high resolution. Dot and line drawing can be controlled directly from the keyboard in eight colors: black, red, yellow, blue, green, magenta, cyan, and white. With a monochrome monitor, the NEC provides three brightness levels for highlighting images or text on the screen.

N-Basic, an expanded Microsoft Basic, is the standard language available on the NEC. This version includes PRINT USING, IF-THEN-ELSE, double precision floating point capability, flexible graphics commands, and the single command to invoke terminal mode.

A fully-configured NEC PC-8000 system will include the I/O unit (PC-8012A) which is designed to expand the memory capacity of the basic microcomputer and to allow for the interconnection of interfaces and peripherals. This interface has a 2K PROM area and 32K of RAM. This RAM is expandable to 128K with additional boards. The I/O unit has a direct connection port for the NEC disk drive unit and seven expansion slots for add-on boards. These output possibilities are in addition to the disk drive port, color and monochrome output, Centronics-type printer output, and audio cassette output on the main computer.

In addition to the I/O unit, most users will need the dual disk drive (PC-8031A). This is a 5-1/4" unit with each disk drive having about the same capacity as the Apple disk drives. Each drive works with just over 143K bytes on a disk. The disks are 16 sectors with 256 bytes per sector and 34 user tracks. Thus, the total on-line disk capacity is just over 286K bytes.

The NEC microcomputer's operating system is powerful and flexible, and because the machine operates with a Z-80 compatible microprocessor, the CP/M operating system can be installed, thereby bringing a very wide range of software into the NEC library. NEC software that takes advantage of the special features of this machine, primarily in the area of sophisticated screen displays, includes general accounting packages and wordprocessing. NEC also supplies a series of programming and other manuals to help beginning or advanced users.

In sum, the NEC is a fine microcomputer with many special features. It is flexible, expandable, and adaptable. Come in to The Data Domain to experiment with this machine.

#### APPLE COMPUTER'S FAMILY SYSTEM

By now, everyone knows about the Apple II microcomputer. One of the Apple's most attractive features is its friendly and accessible organization and the outstanding library of games and educational software available. Now, the Apple Computer Company has created a special package of Apple equipment, software, and information called the Apple Family System.

This is a system with a retail value of \$2625 that will sell for \$2495 as a package and includes the following hardware, software, and materials.

#### Hardware

- Apple II plus with 48K memory
- Disk II with controller card
- Hand controllers (game paddles)
- RF Modulator (to connect to a home tv)

#### Software

- Applewriter 1.1 (Apple computer's very popular wordprocessing system)

Personal Filing System (an outstanding small database system)  
 Personal Finance Manager  
 Typing Tutor  
 Apple Adventure  
 Olympic Decathlon  
 Stellar Invaders

#### Training and Resource Materials

Family System Owner's Guide (New for this system)  
 Keyboard Tutorial (New for this system)  
 Applesoft Tutorial  
 Applesoft Reference Manual  
 DOS 3.3 Manual

The Apple Family System is an excellent way for first-time computer users to begin computing. As packaged, this system includes enough high quality software for the system to be immediately useful for adults and children. And because this machine is one of the best supported computers in the field, its capabilities can be easily expanded to meet practically any set of requirements. Because The Data Domain is a full service dealer, purchasers of the Apple Family System receive a wide range of support. The Data Domain sets up the system and checks it out to be sure everything is in working order, and The Data Domain staff is always ready to assist with advice.

The Apple Family System is an ideal Christmas present for the entire family, for no other home computer offers the reliability, expandability, quality, and versatility of the Apple at such an economical price. Call or visit The Data Domain to inquire about the Apple Family System.

#### COMPUTER BOOKS AT THE DATA DOMAIN

This issue we are featuring Prentice-Hall computer books. Some of these are in-depth technical books for users and designers of computer equipment and software, and others are introductory treatments of computer topics. The books carried by The Data Domain cover all the major microcomputers and microprocessors available today, and some relatively less well-known computing devices. If you don't see the books that interest you in the following discussion, come in and browse through the extensive book and magazine racks at the Data Domain.

#### Apple Books

##### Apple Basic for Business (Parker and Stewart)

A practical guide to Basic on the Apple II computer that provides useful suggestions for business programming using the Apple computer. There are sample programs of business applications and a special emphasis on file handling.

##### Apple Machine Language (Inman and Inman)

This innovative approach to Apple machine language takes the user from familiarity with the Basic programming language into the intricacies and power of machine language for the Apple's 6502 microprocessor. This book includes the essential material to start programming from the Apple System Monitor with ease and expertise.

##### Pascal Programming for the Apple (Lewis)

This is a comprehensive guide to UCSD Pascal as implemented on the Apple. It includes a discussion of the fundamentals of the system and many ready-to-run programs, special applications for business, home, games, sound, and graphics.

##### Interface Projects for the Apple II (Hallgren)

This is one of a series of handbooks designed to show small system users how to create their own interface accessories. This is primarily a hardware-oriented text with a number of specially-designed and easy-to-build projects for the Apple, but the book also includes the software to support this hardware.

Apple Basic (Haskell)

This is an outstanding supplement to the Apple manuals on Basic programming. This book covers graphics, financial management, games, and math. It includes explanations of all programming aspects including interface programming and sample programs.

TRS-80 BooksTRS-80 Assembly Language Subroutines (Barden)

This provides TRS-80 owners with a book on assembly language routines that are directly applicable to their computer. There are more than 100 subroutines that can be used as is, modified, or studied. This collection of ready to run programs covers a wide spectrum of applications. A very useful book for beginning and advanced programmers.

Introduction to TRS-80 Level II Basic and Computer Programming (Zabinski)

This is a practical manual that gives fundamental introduction to all aspects of Level II Basic on the TRS-80 computer. It assumes no previous computer background and no math beyond arithmetic. Material is presented as it would appear on the TRS-80 screen.

General Microcomputer BooksThe Computer Cookbook (Bates)

This book shows users everything they need to know to construct microcomputer system from readily available components.

Computer Programs in Basic (Friedman)

Business/Finance, Games, Math, Science/Education, Personal Interest, and Utility programs are reviewed in over 173 categories. The book briefly describes what these programs do, where they can be found, and what equipment is required to make them work.

Microprocessor BooksZ80 Users Manual (Carr)

The indispensable guide to this popular and power computer chip. Contains information on Z80 pin definitions, CPU control signals, support chips, interfacing peripherals, and more.

LanguagesBasic Programming Self Taught (Hersh)Learning Basic Fast (DeRossi)The UCSD Pascal Handbook (Clark and Koehler)

This book contains Pascal language description organized for quick reference. Built around example programs, this introduction to Pascal requires no prior experience with the Pascal language.

Starting Forth (Brodie)

This is a complete guide to the new Forth language and operating system for beginners and advanced users. The text includes and explains all standard Forth words and commands and explains how to write programs for simple applications of Forth.

ADA Programming Structures (Cherry)

This is a thorough sourcebook to ADA language and stresses topics unique to ADA. ADA is a relatively new language that is not in wide circulation, and this book is one of the few sourcebooks for working with this high-level language.

The C Programming Language (Kernighan and Ritchie)

This is the first text available on the C programming language which offers a detailed and

understandable explanation of all aspects of the language. There are complete program examples and many useful algorithms, data structures, and programming techniques. The text also includes a reference manual that is a complete description of C.

#### THE INSPECTOR: APPLE DISK AND MEMORY UTILITY

This is a powerful utility that permits you to examine and edit data that resides either in the Apple memory or on an Apple II disk. It is possible to examine information that resides on most disks with non-standard DOS. The utility comes in two forms. The RAM form is a disk-based program that can be loaded into memory where it does not interfere with any program and is always available for use. The ROM version is an integrated circuit that plugs into the standard Apple II and is always available for use. This means that the Inspector can be used at any time without stopping to load an extra program.

The Inspector allows you to read information from a disk, edit and change it, and write it back to the disk. It can scan through a disk, one sector at a time. It can inspect any sector or track and the data can be displayed in either alphanumerical or hexadecimal form. Blown disks can be recovered, catalog entries fixed, control characters detected, and specific data found on a disk. It can also be used to repair errors in files used by data bases that have non-standard disk systems.

But the Inspector can also search and display and edit anything in the Apple computer memory, search for a specific string in memory, or display a HEX or ASCII dump of any consecutive memory locations. The Inspector needs a 16K Apple. For the ROM version you need a standard Apple II or if you have an Apple II+ you will need either the Integer, Language, or 16K RAM card. The Apple II+ can use the RAM version of the Inspector without any extra hardware but the standard Apple II will not accept the RAM version. There is no difference in price between the RAM and ROM versions.

This is a utility that is especially valuable for the advanced Apple disk user. The manual is helpful and reasonably clear, but without advanced knowledge of the Apple disk operating system, the Inspector's power cannot be used. For those Apple users with a need for a good disk and memory utility, this is an outstanding value.

#### THE CORRESPONDENT A User Report

The Correspondent is a text editing program for the Apple II that seems to be relatively less well known, even though it should get an A+ for its cost/performance. Quite simply, it offers a range of features that I think is unmatched by any other text editor in its price range.

The program can be purchased in either a DOS 3.2 or 3.3 version. It requires an Apple II+ (with Applesoft in ROM or the Language Card), one disk drive, and a printer. It should be able to work with any printer that uses a standard serial or parallel interface. The package contains one disk with the program and a large instruction manual. A back-up disk is not included because the program permits the user to make three back-up copies, and the manual urges you to make one of these before learning to use the features of the program. The copy program included needs only one disk drive and prompts the user to change disks.

The manual has to be one of the better pieces of documentation supplied with any computer program. It is comprehensive and written in easy to understand English. It provides detailed descriptions of all the functions in the program and instructions on how to use them. Two very nice features are the Trouble Shooting Guide and the Command Summary pages. The Command Summary even gives the pages where each command is discussed. The program also has a module to print out copies of the Summary for ready reference. This manual is one of a very few that I think gives really satisfactory instructions to the first-time user of a program.

The Correspondent has two main levels of operation: the Scroll mode and the Edit mode. The Scroll mode is where all operations that pertain to the file as a whole are done. In this mode, you can scroll through the text; insert and remove lines; copy, move, or delete blocks of text; save and load files; change file types; and do global searches of a file or a disk. Another useful feature in this

mode is the ability to call up the built-in help pages for either mode when you have forgotten an instruction, and to create additional note pages for such things as the control codes for your printer. This mode also permits a temporary exit from the program in order to execute commands that are not normally within the ability of the program.

The other main level of the program, the Edit mode, is where all text is entered and altered. In addition to the expected features like inserting and removing characters, scrolling text, and shifting for upper case, there are some features that I didn't expect to find in a program in this price range. For example, there is a forward and reverse horizontal tabbing with the ability to set tab stops at the locations you want. Text can be inserted in normal, inverse, or flashing characters. Since a flashing character is interpreted as a control character, this feature can be very useful for controlling your printer from within your text. This mode also permits the automatic centering of a line of text; very useful for doing titles. There is an optional character command which gives characters not usually accessible from the Apple keyboard. This is also useful as another way to put printer controls into your text. The left margin can be set to any column on the page, which makes it easy to enter columnar data tables into the text. Finally, it is possible to link several files on the disk for global searches or long printouts.

It is not possible in a short review such as this to cover all the text editing commands in this program because it has more than sixty of them. In addition, Southwestern Data Systems has incorporated several other modules into the program that make it useful for things other than text editing. I can't detail all of them here, but the program can be used, for example, as a simple data base or as a form letter driver.

In summary, I like this program because it is easy-to-use, versatile, full-featured, well-documented, well-supported by the author, and very reasonably priced. If you need to do some writing, then come to The Data Domain and check out this program before you spend several hundred dollars on one of the better known wordprocessors. You will be pleasantly surprised to find that this sixty-dollar program has more than enough power to take care of your needs.

Ron Howell

#### THE DATA DOMAIN CHRISTMAS SALE

The Annual Data Domain Christmas Sale is now in progress. A large selection of software is on sale, and we have expanded our pre-Christmas 10% off game software sale to include all software in the store. With any purchase of \$100 or more The Data Domain will pay all shipping. The 5% discount to members of the IndianAppleUs and Apple-Pickers Apple user groups is still in force. That discount is included in the 10% off on software. Because of the cost of handling credit card purchases, please pay for discount merchandise with cash or check if you can.

We also have a cash-discount policy on hardware purchases over \$250. Please inquire at the store.

If you are looking for a holiday gift for your favorite computer fanatic, consider one of the many exciting and challenging games and adventures available from The Data Domain. We have gift certificates if you don't know what to get.

In addition to hardware and software items, The Data Domain carries books, magazines, and other accessories for computer enthusiasts. We have computer covers to keep dust off of that marvelous machine, fans to cool it, and plug-in devices to improve its game-playing ability. Stop by The Data Domain for gift ideas suitable for any price range.

Make this the best holiday ever with computer gifts for your favorite electronic whiz.

LAST MINUTE SPECIAL SALE  
COMPLETE BUSINESS SYSTEM FOR \$6000

The Data Domain is offering a complete business computing system for only \$6000 (price good until December 31, 1981).

As an introduction of the Televideo computer system we are offering the Televideo model 801, NEC model 8023A printer, and our new Complete Business System software package (normally sold for a total of \$7550.00) for \$6000. The software includes CP/M operating system and our General Ledger, Accounts Receivable, Accounts Payable, Payroll, and Inventory packages. These are compiled versions and run exceptionally fast. Comprehensive, thorough, and friendly documentation is included.

Optional configurations other than described here are available at comparable savings. This could include a letter quality printer and wordprocessing or a Televideo Model 806 multi-user, multi-tasking system.

Specifications:

Televideo Model 801: 4 mhz Z80, 65,536 byte memory, dual 5-1/4" mini-floppy disk drives with a total of 1 megabyte of storage. Parallel printer port, serial port with Televideo 910 CRT terminal (console) and a spare serial port.

NEC 8023A Printer: 100 characters per second, bi-directional, logic seeking. 2000 character buffer. Accepts fan-fold or cut-sheet paper. High-resolution (bit) graphics. 7X9 dot matrix characters with true descenders. Underlines, super- and sub-script, and automatic justification. 80, 96, 132 characters per line, emphasized print. Paper up to 8-1/2" wide plus perforations for tractor feed. Tractors will adjust from 2-1/2" to 8-1/2" plus perforations.

Software: The Data Domain, Inc., Complete Business System including General Ledger, Accounts Receivable, Payable, Payroll, and Inventory.

This offer good until December 31, 1981. Price does not include installation at customer's location or cost of optional user training, etc.

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