IBM to Publish Programs

Computer program authors who write applications for the IBM Personal Computer may have them considered for publication by the company's Personal Computer Software Publishing Department.

IBM employees and external authors — from professional programmers to hobbyists — can submit programs for consideration.

The department was formed to ensure that IBM Personal Computer users will have a continually expanding library of quality applications. It will complement software marketed by independent software firms and will provide an opportunity for authors to have their programs published by IBM.

Software submission information packets provide additional information and submission instructions and are needed by authors before they submit programs to IBM. Packets can be obtained from: IBM Personal Computer Software Submissions, Dept. 765, Armonk, N. Y. 10504.

S.F. Hosts 7th Computer Faire in March

Friday through Sunday, March 19-21, the West Coast Computer Faire will take place for the seventh time. Last year, this event drew over 31,700 to its 3-day conference program and product exposition that included well over 500 booths.

Over 100 speakers are expected to participate in this year's Faire Conference. Talks will range from introductions for novices and discussions of educational computing, through a large variety of applications and business discussions, to "heavy" technical presentations. (See the partial listing of more than 70 topics, given on page 9.)

The exhibition area has been expanded to the capacity of San Francisco's Civic Center convention complex, having over 600 booths. This includes a set of micro-booths, unique to the Computer Faire, that provide exposure to innovative but undercapitalized entrepreneurs.

There will be meetings of a number of user groups including users of CP/M, TRS-80, Apple, Pet, Zenith/Heath, etc.

A series of half-day and full-day seminars are also being planned, including introductions to programming, Basic, Pascal, business microcomputing, human interface design, etc. (Faire registration includes admission to the conference program and the exhibits, however, there will be additional fees for these in-depth training seminars.)

New Motorola MC68000-based Microcomputer

Fortune Systems Corporation has introduced its first product, a powerful desktop system in the $5,000 price range.

Based on the Motorola MC68000, the Fortune 32:16 is a low cost, flexible system which can handle the requirements of a one-person office and expand to a complete system for the small to medium-sized business or department of a large corporation.

The Fortune 32:16 features an operating system derived from Bell Labs' proven UNIX system and has a full range of business application software packages. To make it easy to use, Fortune Systems has developed a comprehensive set of user-oriented support aids encompassing everything from the initial system set up to application conversion.

The basic Fortune 32:16 model includes a 32-bit microprocessor with a 16-bit data path, expandable memory (128KB - 1MB); 1MB 5¼-inch floppy disk drive; keyboard; and a 12-inch video display. A 5¼-inch Winchester disk drive, with optional 5, 10, or 20 Mbytes of storage, is available for applications requiring more storage capacity.

The basic Fortune 32:16 configuration sells for $4995 and includes a 90-day service warranty. Fortune Systems expects to ship its first system in March. For more information, please contact: Fortune Systems, 1501 Industrial Road, San Carlos, CA 94070, 415-595-8444.

Editors are the Worst Gossips
or
Gossips are the Best Editors?

by Jim C. Warren, Jr.

Running a computer convention and publishing a coupla computer rags is near-Nirvanna for a techno-gossip. It places one in the middle of the computer information knitwork (sort of like a snag?). A multitude of rumors flow in one ear and . . . onto paper — some of which may even be true.

Summarized, here, for the entertainment (and possibly for enlightenment) of the reader is a semi-random selection from our pile-file of recent ribald rumors and rabid opinion.

'BOUT IBM

After seeing the IBM personal computer, we join Apple in applauding IBM's entry into the consumer(?) computer market. By issuing the incantation so holy to so many — "I B M" — it validates that marketplace in the geriatric minds that insisted personal computing was a mere novelty (like Bell's telephone and those belching horseless carriages).

It seems certain to expand the distribution of computing power to the public, probably not even harming the dollar sales of many of the "old line" micro makers (though certainly cutting into their market percentages). And, IBM is offering an excellent product.

SO MUCH, SO RIGHT

Frankly, we were somewhat surprised that such a conservative goliath as IBM did so many things so right in their personal computer. We had rather expected them to continue some of their less enchanting traditions, e.g. trying to be all things to all people (PL/I), trying to do everything in-house (OS360), and,

of course, pricing their units about double their competitors (Selectrics) . . . each of which was good — eventually.

With their p.c., they have done an excellent job of being many things to many people — comfy keyboard, color graphics, sound generator, printer, 640 x 200 graphics resolution (higher'n competitor Apple), "mature" packaging, and excellent documentation (something that is disturbingly novel in the micro world).

They went outside for their software — a semi-unique action for IBM. They chose to offer the 8086/8088 version of CP/M as an option along with their standard DOS from Microsoft (a choice we hear was made at the last minute). And, they have instituted a software publishing department to which outside software producers can contribute royalty-earning software. Bravo!

Delightfully, they have priced their system about the same as the list price of their Apple II target, thereby allowing it to be purchased by mere humans.

And, we believe they are aggressively pursuing such desirable add-ons as a Winchester and probably networking. (How 'bout an SMD interface for big discs? The 8088 certainly has the horsepower to utilize large mass storage).

We are also much impressed with the highly professional and ethical manner in which we have noted them conducting business. They maintain very tight control over the development and software for their product (no hip-shootin' EE's — that's Egotistical Engineer — installing glitches that become undesirable "features"). Also, they speak no

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Editor's Gossip

ill word of their competitors, in private or public . . . a somewhat novel event among micro mogols.

A MARKETING GLITCH

But, IBM may have slipped in setting up its marketing. It has chosen to make its p.c. available, initially, only through IBM stores, Sears business stores (hopefully better-operated than Sears retail stores), and some Computerland stores (contrary to popular impression, not all Computerlands can qualify to carry the IBM machine — they are accepted by IBM on a store-by-store basis).

And, of course, none of these three retailers will stray from the "suggested" list price. So much for free market competition. (Does OPEC have four characters or three?)

IBM p.c. honcho Don Estridge did say that they were planning on picking up other computer retailers, but it appears that will not occur until sometime into the future.

And, this decision has left a freeway on which some hot competitor can gleefully drive into the newly expanded market. That freeway is paved with the mass of systems houses and retailers, furious at not being allowed to even bid for the opportunity to be among the initial distributors of IBM machines.

Additional fuel for the entry of new IBM competitors is offered by the fact that IBM's DOS is not an IBM-exclusive — Microsoft can offer it to other manufacturers, jus' like Digital Research with their CP/M.

ENTER THE VICTOR, SIRIUSly

And, there is a hot competitor. Chuck Peddle is one of the better-known frontiersmen (frontierspersons?) in the Silicon Valley. He earned his Dan'l Boone wafer by creating the 6502 for MOS Technology back in the early daze of microprocessor design, then the Pet (the first-announced, fully-constructed consumer computer) for Commodore. He has now spun off, created his own company named Sirius Systems Technology (Scotts Valley, California), and created the Sirius One (pun undoubtedly intended).

SILICON SYMBIOSIS

In a delightfully symbiotic move, Chuck struck a deal with Victor Business Products to be the exclusive peddler of the Sirius One (in in) North America, being marketed under the name of the Victor 9000. This gives Victor a quick way to become a serious competitor in the personal computing market, and gives Chuck ample backing and a very mature and successful nationwide marketing operation.

Victor is the the largest manufacturer of traditional desktop calculators in the U. S. It is an old-line, conservative company, and a subsidiary of Kidde (pronounced "Kiddah"; not "Kidd" nor "Kiddie"), the dollar-strong fire extinguisher manufacturer.

THE VICTOR 9000

The Sirius machine is well worth looking at. One of the sages of the computer industry said to us, "Chuck has done all the things IBM should have done." We think IBM did lots of things right, but let's compare:

Like the IBM machine, it uses a 16-bit, 8088 as its CPU. Like IBM, Sirius has a detachable keyboard. In fact, it has five keyboard options (typewriter, word processor, programmer, etc.).

IBM offers a video monitor as an option (a necessity for most useful information processing). The 9000 comes with a green phospher screen that is tiltable and turna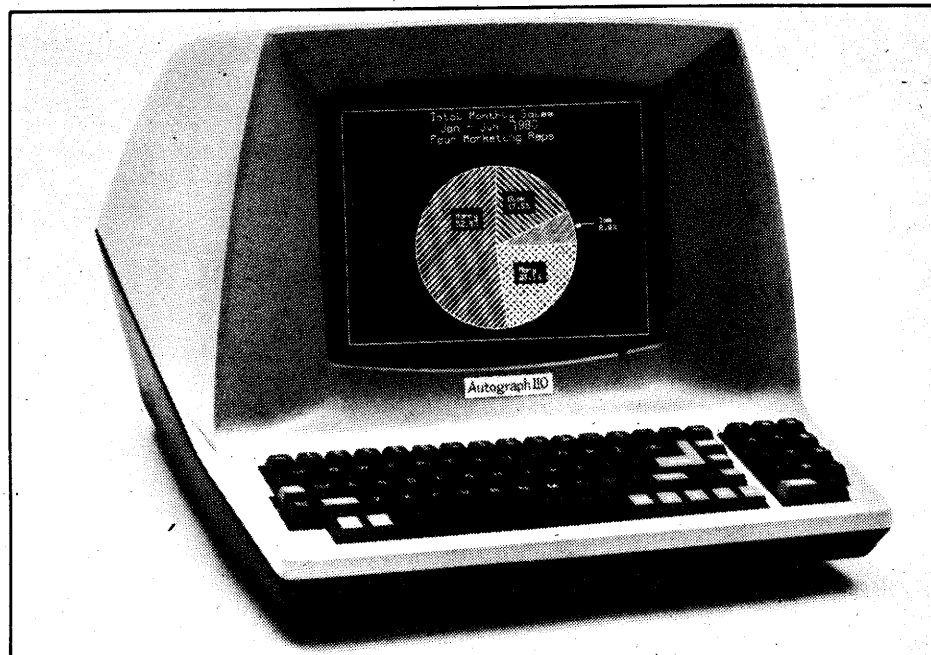ble — not just a monitor with a handle on the top. The 9000 has a graphics mode with an *800 x 400 resolution!* IBM offers, at best, 640 x 200.

132-CHARS x 50-LINES OF TEXT!

If you get tired of skinny paragraphs and lines running off the traditional 80-character x 25-line display, you can switch to the Victor's 132-character x 50-line display, complete with fully legible upper and lower case characters, with descenders. (That, alone, is enough to sell it to us word-junkies.)

IBM's character display matrix is 9x14. Sirius' is 10x16 or 16x16. The character set is loaded into user-accessible RAM, so, if ya don't like what you see, ya can change it to suit your palate.

Unlike IBM, the Sirius unit does not currently support color (a decision that was debated long and hard), but the system has all the hooks to add color, later. Our impression is that they felt that (a) their first marketplace is the business market, to which

color is less useful than for home and educational computing, (b) it's very difficult to do really useful things, in an information sense, with color, and (c) hi-res color monitors capable of supporting those great graphics and 132x50 text displays cost lots!

1.2 MEGABYTE FLOPPY DUET

The 9000 comes with dual 5¼" single-sided floppys, like the IBM. Unlike the IBM, which can store 163K, the Victor system packs 1.2 megabytes into those two on-line minifloppys.

CP/M-86 & MSDOS

Like the IBM p.c., the Victor system offers both CP/M-86 (available right now — IBM's is expected, soon), and Microsoft's also-IBM DOS. Unlike IBM, both MSDOS and CP/M-86 come with the system — CP/M is an option with IBM.

And there is the usual package of support software, e.g. a VisiCalc clone (VisiClone?) called VictorCalc from Image Systems, a Select editor, etc.

THE FUTURE IS VERY SOON

Oh yes, Victor will almost certainly be offering a Winchester and an SMD interface before the end of '82, and very probably a medium-speed networking facility (say, 1 to 2 megabit bandwidth). We suggest that Victorites also watch for a C compiler and a Unix operating system licensed from Bell Labs as yet another 1982 option (installed and supported by one of the best micro unixizers in the business).

ORANGES & APPLES — HOW MUCH?

The Victor/Sirius system with dual floppys (1.2M), screen (80x25,132x50, and 800x400), 128K of memory (that's minimum), MSDOS and CP/M-86, lists for $4995, a price that might be haggled once the supply pipe begins to fill.

In this apples-with-oranges comparison, an IBM system with dual floppys (163K), screen (80x25 and 640x200), 48K of memory and MSDOS is $3525, available from list-price-only dealers.

DATASOURCES

The IBM data for this was lifted primarily from a potent, 150-page product and market assessment, *IBM's Billion Dollar Baby: The Personal Computer*, by Isaacson & Juliussen, available for $450 from Future

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New MQI Graphics Terminal

A new conversational computer terminal that provides several graphics options was recently unveiled by MQI Computer Products.

The MQI Autograph 110, based on the popularly priced TeleVideo 910 conversational terminal provides many CRT features, plus graphics options that make it compatible with many graphic software systems, including the Tektronix Plot 10. These features give the user capabilities necessary for the arrangement and display of any type of information in graphic formats.

Features of the 110 include switch-selectable compatibility for emulating the Lear Siegler ADM3 or ADM5, Hazeltine 1410 and ADDS 25 or Viewpoint. This provides system versatility for the 110 without requiring system modifications.

For more information, please contact: MQI Computer Products, 2615 Miller Ave., Mountain View, CA 94041, 415-948-8961.

Computing in Richardson, Texas. The Sirius/Victor data came by voice, verified with Sirius.

For more info on the IBM system, contact them at Box 1328, Boca Raton, FL 33432.

Victor can be reached in Chicago at 312-539-8200. Their dealer maker is Richard Farkas. Their software acquisitions dude is David Boudreau.

MICROMATION'S MARINER — A CLASSY CHASSIS

Folks who want to run an unusually well engineered multiprocessor, multiuser system — right now (rather than in a year or so) — should take a look at the Mariner from Micromation.

For a starter, it has one of the best-designed chassis we have seen. It is an attractive, shaped steel box. It stands up on the floor (on recessed wheels), rather than laying

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Zilog, Litton Convert Ada for Military Marketplace

Zilog, Inc., and Litton Systems, Inc.'s Data Systems Division have agreed in principle to cooperate on a program to convert the Ada programming language to run on Zilog's 16-bit System 8000 and to generate code for the Z8000 microprocessor family. The agreement is expected to be formalized soon.

The joint program will combine Litton's expertise in military systems and software with Zilog's microcomputer technology to provide development tools for the military marketplace.

"Ada, which will soon be a prerequisite for all military computer system contracts, is on its way to becoming a standard programming language of the eighties," Zilog President Manny Fernandez said. "It is an extremely portable high-level language that will allow users to acquire independently written software modules and easily incorporate them into ongoing projects. This high level of portability will result in improved programmer productivity levels because the need to write new code for every phase of a project will be significantly reduced."

Fernandez contends that the implementation of Ada would strengthen the already strong position of the Z8000 family in the military market. In 1980, Zilog licensed the U. S. Air Force to use the Z8000 CPU's instruction set in defense-related computer systems. The agreement represented the first time a commercially available instruction set had been licensed to one of the armed services.

Zilog's component manufacturing process has been certified by the Department of Defense Electronics Supply Center, permitting the company to qualify both its eight- and 16-bit microcircuit families as JAN MIL-M-38510 devices.

The System 8000 is a multi-user microcomputer system that offers minicomputer-level performance by combining UNIX operating system with sophisticated Z8000 16-bit hardware. The system can be used to develop code for all Zilog microprocessors or adapted for commercial applications.

Commodore Pilot Aid
Highflying Computer Navigator

RNAV3 Navigator, an air navigational aid, is now available for pilots from Briley Software. The program uses Commodore PET/CPM microcomputers.

The computerized navigator obtains true straight line courses for aircraft having DME equipment and VOR-TO-VOR courses for aircraft without the DME ability.

RNAV3 Navigator performs hundreds of trigonometric functions per flight, handles the spherical nature of the earth (polar coordinates), and searches for the closest radio signal while the flight path is being calculated.

As complicated as the program is, the pilot provides only four items: Flight Option, Waypoint Interval (if DME used), Departure and Destination Coordinates. The calculated flight path is displayed on the computer's screen and optionally sent to a printer. Each waypoint of the flight contains the closest VORTAC code-name, radio frequency, radial, and distance from path. Each point also displays the magnetic compass bearing, nautical miles traveled, and miles left to complete.

The program comes in two versions. One fits within the 8K sized PET microcomputer that covers the three Pacific States, Idaho, Nevada, and Arizona. A 16K version covers the Eleven Continental States west of the 102nd Meridian. Other versions covering the rest of the United States are being planned.

The 8K version costs $25, and the 16K $30. For more information, please contact: Briley Software, Box 2913, Livermore, CA 94550-0291, 415-455-9139.

SSM Serial/Parallel I/O Interface

SSM Microcomputer Products Inc., a manufacturer of board level products for the IEEE 696/S-100 bus, has introduced the I05, a combination serial/parallel input/output board.

The I05 offers two asynchronous RS-232 serial interfaces, simplifying peripheral additions to the bus, and header selectable variable baud rates (110 to 19,200), supporting a variety of high-speed serial data transmission devices.

It also offers three parallel ports, including a bi-directional, programmable port with 16 data lines, supporting a variety of input/output combinations; an 8-bit input interface for general purpose data entry (e.g. ASCII keyboard); and an 8-bit output interface for total compatibility with all Centronics devices. Data activity is monitored via send/receive LED indicators on each line.

The I05 retails for $329, and is available through SSM dealers and distributors. For more information, please contact: SSM Microcomputer Products, Inc., 2190 Paragon Dr., San Jose, CA, 408-946-7400.

Conference Session
Computer Design of Tiffany Lamps

In his upcoming 7th West Coast Computer Faire talk, "Computer Assisted Design of Tiffany Lamps," Mike Higgins will explain how computers can help make for more creative stained glass and window design. The proprietor of Space Glass, in Duncans Mill, California, says the computer is a liberating, rather than inhibiting, design tool.

"Older lamp designing techniques require making a mold and fitting pieces of glass to it by trial and error. The effort involved . . . makes it more economical to produce many lamps from the same pattern. This is not true with my computer assisted program . . . I never have to produce multiple copies of lamps to recoup the investment," says Higgins.

At the Faire, Higgins will describe his craft, the algorithms he uses, and his interaction with his programs which have been run on a PDP11 computer, as well as a small micro system.

Conference Session
The Computer, CNS and Information Processing

Which is the more efficient information processor, the computer or human central nervous system? In her 7th Faire talk, "Information Processing by the Computer and the Central Nervous System," Clara Torda, M. D. will discuss the differences and similarities between these two unique information processors.

"Theoretically, the performance of the computer regarding logical consistency, speed, accuracy and efficiency is far superior, except that its scope is limited," says Dr. Torda.

"Computers are highly complex fixed mechanical systems constructed from chips and are encoded by means of a binary number system or its derivatives. The CNS is built from neurons, each being a separate microcosmos of submolecular and subatomic processes," says Dr Torda.

In her talk, Dr. Torda will discuss: the neuron, synapse, information processing (graded slow potentials (codes) and spikes), and computer and central nervous system coding techniques. Her comments will also include a summary of the known coding methods of the CNS, a discussion of brain waves, and a comparision of computer and human memory.

Dvorak Keyboard Throughput

Today's newest technological wonders — computers — are handicapped, say Don Fitchhorn and Waldo Boyd. They contend that the conventional typewriter keyboard, invented almost a century ago and used on most of today's computers, is inefficient. It should be replaced, they assert, by the Dvorak Simplified Keyboard.

In their talk "Increasing Throughput with the Dvorak Keyboard," Fitchhorn, a senior analyst with Tandy/Radio Shack, and Boyd, a free-lance science writer, will explain that in today's computers: "The most vital consideration of all, the man-to-machine interface, suffers from a most debilitating malady."

Fitchhorn and Boyd will discuss merits of the Dvorak board, how to change a conventional keyboard into a Dvorak, and other aspects of what they see as a major aid to computerists. With Dvorak boards, the speakers say, "awkward movements are transformed into rythmic naturalness."

128K Memory Board

Systems Group, a division of Measurement Systems and Controls Inc., has announced the development of its 128K Bank Selectable Dynamic Memory board featuring full compatibility with Alpha Micro, Cromemco/Cromix, Dynabyte, NorthStar and most other S-100 mirocomputer systems.

The new IEEE compatible Dynamic Memory offered by Systems Group incorporates eight totally independent 16K byte software selectable banks with each bank independently addressable on any 16K boundary. Up to eight banks (512K) are supported per I/O port for each of the 256 ports.

Their new 128K board also features parity for single bit error detection, 24 bit extended addressing, ten on-board diagnostic LEDs and Z-80 4MHz operation using transparent refresh and low power requirements, eight watts maximum.

Systems Group's S-100 memory boards start at $1,595. For further information, please contact: Larry Malakoff, Systems Group, 1601 Orangewood Avenue, Orange CA 92668, 714-633-4460.

New 8.4 Megabyte Hard Disk Memory

Radio Shack, a division of Tandy Corporation, now introduces hard disk storage for the TRS-80 Model II computer. A Winchester technology 8-inch hard disk permits over 8.4 million characters of program and data storage on each drive. This new storage system eliminates the need for repetitive handling of floppy disks when using different programs, since multiple programs can reside simultaneously in the hard disk system.

The TRS-80 Model II Hard Disk System (26-4150) is available for $4,495 (plus installation) at Radio Shack Computer Centers, selected stores and participating dealers. Up to three secondary hard disk drives may be added for a total storage capacity of over 33 megabytes. Seco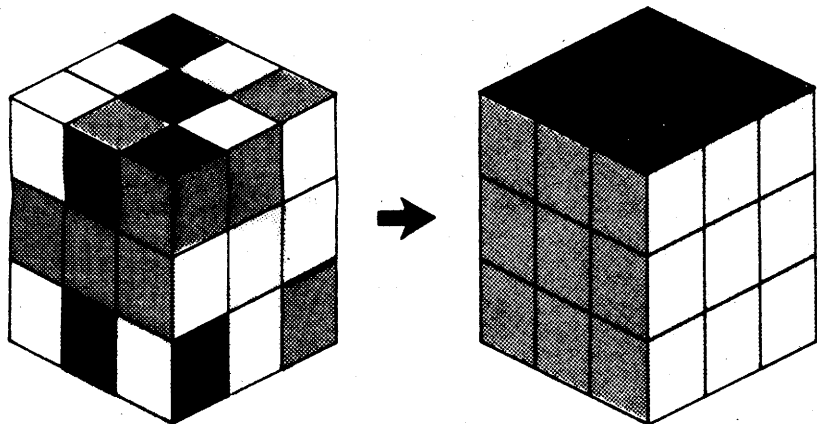ndary hard disk units (26-4151) are available for $3,495 each at Radio Shack Computer Centers, selected stores and participating dealers. Installation is required and is available from Radio Shack.

The TRS-80 Model II Hard Disk System incorporates Radio Shack's TRSDOS operating system, making it compatible with most existing Model II software. All current TRSDOS library commands are available, plus two new utilities - Save and Restore. The Save utility saves data from the hard disk onto one or more back-up floppy disks; Restore writes data from a floppy disk onto the hard disk.

For more information, please contact: Radio Shack, 1800 One Tandy Center, Ft. Worth, TX 76102, or your local Radio Shack Store.

Editor's Gossip...

around occupying horizontal surfaces that could better be cluttered with dust and unread papers.

Example of high-quality human engineering: It has a spring-loaded safety cover over the reset switch.

With one click the front folds out carrying all of the S-100 bus and boards for ready access. No more ugly and expensive rack mounts, or cross-threaded screws after the eleventeenth access.

Obviously much thought, care, and careful human engineering went into the design of this crate.

Then there's the functional guts. It two 8" dual-density floppys and/or a 21Mb Winchester. For backup, it offers a streaming 3M-type cartridge drive with a 20Mb capacity per cartridge.

For a single user, there is a single S-100 board containing 64K of RAM and a 4MHz Z-80. For a multiuser system, they have users-plus-one of those 64K/Z-80 boards — one to handle peripherals traffic. That means each user gets their own full-speed processor and memory; not time-slicing 'em like old time-sharing systems.

For software, Micromation offers CP/M (single-user), a "modified and enhanced" MP/M (multi-user), or their home-grown system that is CP/M-compatible and includes an integral DBMS.

Micromation's home-based in San Francisco, 415-398-0289.

MONSTER DATA TRANSFER & STORAGE – AT LAST!

Microcomputers are great, but they are doomed to remain grossly under-utilized semi-toys until they can handle large amounts of data . . . jus' like those inhumane, overly-expensive megamonster mainframes. Floppys, Winchesters, and other hard discs help, but micros have been missing a standard and inexpensive means for mass data transfer and archival storage.

30cps phone links or 300Mb floppys jus' don't cut it for transferring multi-megabyte files. (Note: A 100,000-name mailing list occupies more'n a megabyte.) And it becomes very expensive, very fast, to try to do regular archival backup on floppys, to say nothing of using $100-$300 hard-disc cartridges.

Many micro makers are addressing the backup problem by offering 3M-type tape cartridge systems. Its cost effective, but because there is no recording standard, and because few big computers have such systems, it doesn't solve the problem of transferring large quantities of data. (Hmmmm, how 'bout paper tape?)

There has been a standard solution in the dinosaur machine world for decades — "industry compatible" (meaning IBM compatible) 7- or 9-track tape. The recording standard is irritatingly and unnecessarily complex and expensive to implement, but . . . it is a *standard*; it does exist on all those antique machines; the media is inexpensive; and, a number of companies now make reasonably inexpensive 9-track tape drives.

A coulpa years ago we suggested that a "hot product", immediately needed, was an inexpensive, 9-track tape subsystem for S-100 machines and other micros.

About a year ago, Alpha Micro announced a 9-tracker that was a little too expensive for us. More recently, other companies have announced other 9-track peripherals.

Now, we have received a note from a Natick, Massachusetts, company named Alloy Engineering Company (precisely the company you would expect to produce a tape system, right?) announcing an S-100 tape system using the Cipher Microstreamer Series One 9-track drive for only $6795, unit quantity. Including software for many CP/M systems. Or for CDOS. Or for OSI systems.

Or for the Alpha Micro (Contact your local Alpha dealer and ask for one — the dealer discounts for these units are healthy enough to be attractive. At Alloy Engineering prices, Alpha dealers should be able peddle a multitude of these subsystems.)

AEC also has interfaces for Altos (non S-100), DEC and DG machines. (DEC and DG units cost a bit more than the $6795.)

NOW *THAT'S* A WARRANTY!

The list price for these Alloy Engineering tape systems includes a full-year warranty providing for 48-hour, full-unit replacement of the drive or interface, should they fail! That's the best possible way they could prove that they feel their units are reliable.

BUT, ARE THEY REAL?

Having watched the computer industry's product announcements for most of a decade and a half, we looked at this Alloy Engineering announcement with some faint tinge of cynicism. They had announced the product. But, were they delivering? (Had they even begun manufacturing?)

We phoned their western distributer (DSM & Associates, Agoura, California, 213-991-9901) and asked about availability. They asked if a 2-week delay would be too long!

Needless to say, we are now awaiting

MTI 4MHz Speedup Enhancement

A 4MHz speedup enhancement for its Mod III plus series of computers is the newest offering from MTI, a manufacturer of Radio Shack compatible computer systems.

The 4MHz speedup enhancement doubles the processor speed of the MOD III 140, 240, or 280 systems, when used with the DOS plus operating system. The speedup enhancement is software selectable. Select 4MHz for your fast sort needs or other fast general business requirements, or select 2MHz to run other applications that are time dependent. The enhancement upgrades the Mod III performance to the level of larger machines like the Radio Shack Model II.

The 4MHz speedup enhancement (Model #1414) sells for $149. A retrofit/installation is available at a cost of $50 for current owners of Mod III plus or Radio Shack Model III systems. For more information, please contact: Microcomputer Technology, Inc., 3304 W. MacArthur Blvd., Santa Ana, CA 92704, 714-979-9925.

Conference Session

Around the World in a Gridapple

Computerized map-making and plotting packages have been in widespread use for almost a decade, and have often been available only on large-scale, expensive computers. In his Faire talk, "A MicroComputer-Based Geographic Information System," Benjamin Pierce introduces Gridapple, a geographic data processing package.

"Customized for the Apple microcomputer, Gridapple is intended as a low-cost alternative which retains all the essential features needed to digitize and edit maps, perform various types of analyses, and generate several forms of high-quality output," says Pierce.

Pierce will describe the design and implementation of Gridapple, the history of the GIS field, and the problems and delights of seeing the world by computer. Pierce's talk will be published in the *Proceedings of the 7th West Coast Computer Faire*, available at the March show.

You help us; we'll help you.

Save 33% on Faire Registration

By gathering your friends and associates together, you can all save $5 on 7th Faire Registration Fees — paying $10 each, instead of the $15 "list price". (Or, you can "deal" registrations and earn an extra coupla dollars.) Here's how:

Purchase Faire registrations in blocks of 10, advancing $100. You can return up to 5 of those 10, any time after the Faire (before April 15th) for a 100% refund.

To take advantage of this offer send your check or C. O. D. order for 10 or more registrations (advancing $10 @) to:

Pre-registration Desk
Computer Faire
333 Swett Road
Woodside, CA 94062
Include your street address for certified UPS delivery. We pay shipping on prepaid orders. You pay shipping and collection charges on C. O. D. 's.

New Radio Shack Flyer

Radio Shack, a division of Tandy Corporation, has begun publication of a new bi-monthly flyer, called "Showcase," which is being mailed to Radio Shack Computer Center Customers.

This 12-page catalog flyer features information on Radio Shack computer equipment, including TRS-80 computers, software, accessories and related office products. Full price, feature and catalog information is presented, and colorful illustrations complement the text.

Single copies of the flyer are available free at Radio Shack Computer Centers.

Conference Session

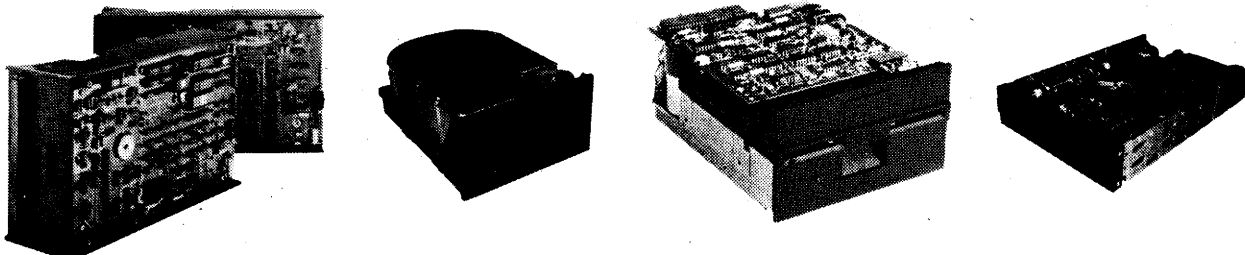## Lancaster's latest book: Enhancing Apples with Exact Field Sync

A simple hardware modification called Field Sync along with its support software can now enable Apple II users to do an exact and jitter free lock to their video screens, says noted author Don Lancaster.

In his 7th Faire talk, "Enhancing Your Apple II," Lancaster will describe how you can use exact field sync for: animation free of glitches, aliases and dropouts; screen mode changes without fl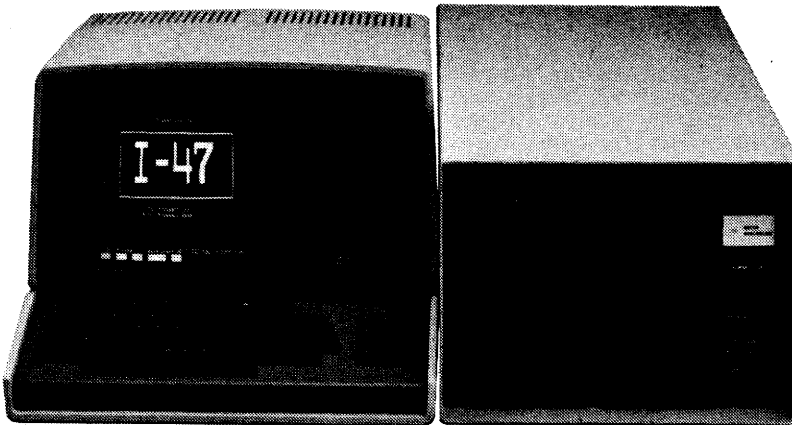ashes or transients; vibrating mirror true 3-D graphics displays; page to page video splits and wipes in any direction, and much more!

"The idea behind field sync is simple enough," says Lancaster, whose presentation will be published in the *Proceedings of the 7th West Coast Computer Faire*, available in March, "Feed a signal from the video display portion of your Apple into a port where software can read it. Then set up your software to do an exact lock."

6th Symposium on Computers in Medical Care

Original papers, and proposals for workshops and tutorials, are now being solicited for presentation at the Sixth Annual Symposium on Computer Applications in Medical Care which takes place October 30 through November 2 at the Sheraton Washington Hotel in Washington D.C. The deadline for submission is March 15.

The Symposium will inform physicians, health care administrators, biomedical scientists, engineers, and other health care professionals about current and potential applications of computer technology to health care and to identify areas of research and development that need to be addressed. Participation is solicited from the medical and computer science perspectives.

For further information, please contact the Symposium Program Chairman: Bruce I. Blum, Johns Hopkins University, Traylor 514, Baltimore, MD 21205, 301-955-8379; or SCAMC, Office of CME, 2300 K Street, N.W., Washington, D.C. 20037, 202-676-4285.

Cassette Business Package

CBP, Cassette Business Package, runs on a TRS-80 Model III computer with 16K memory. It consists of the following programs: a cassette data base manager, a word processor, an inventory control system, a stock management program, a check balancing program, a label printer, a deposit calculator, a statistics program, a sort utility, and a key access utility.

Including two cassettes and a user's manual, CBP is priced at $59. Model I version is also available for the same price. Send $5 for a manual.

For more information, please write: Micro Architect Inc., 96 Dothan St., Arlington, MA 02174.

Seagate Drives Set You Free

Seagate Technology has introduced its "Freedom Generation" of 5 ¼ inch thin film drives, designed for 16- and 32-bit processors.

The Seagate ST538 offers 38.25 megabytes unformatted, with 3672 tracks per drive and a track density of 540 TPI. Additional features include: 32 sectors per track, a transfer rate of 5.0 M/bits/sec, 8.33 MS average latency, 3600 RPM rotational speed, 10,202 FCI recording density, 612 cylinders per drive, 6 heads per drive and 3 fixed discs per drive. Formatted capacity is 30 MB per drive.

The Seagate ST706 removable 5 ¼ inch MicroDisc cartridge drive uses thin film heads. It complements the ST538 as a back-up storage device for multi-tasking, multi-user type systems and offers 6.38 megabytes unformatted per drive. Additional features include: 270 TPI track density, 306 cylinders per drive, 612 tracks per drive, 2 heads per drive. Formatted capacity is 5 MB per drive.

For further information, please contact: Finis Conner, Seagate Technology, Scotts Valley, CA, 408-438-6550.

IEEE Tutorial Week in Europe

The IEEE Computer Society's highly successful Tutorial Week series, initiated three years ago in San Diego, is being exported to Europe. Organized in three tracks over five days and covering VLSI technology, computer graphics, software design and test, and local networks and office automation, Tutorial Week Europe 82 will be held this April 24-28 in Hanover, Germany, (concurrently with the Hanover Fair).

The 60,000-member Computer Society, by far the largest group within the 205,000-member Institute of Electrical and Electronics Engineers, already sponsors two such Tutorial Weeks in the U.S. — one in Orlando in March, the other in San Diego in December. The keys to their popularity, according to Computer Society Tutorials' Chairman Joseph P. Fernandez of IBM San Jose Research, is their currency.

"Technology is moving at such a rapid pace," says Fernandez, "that schools are hard-pressed to keep up. And yet, the working computer engineer or software person must stay current. Our tutorials are given by practicing professionals, and they zero in on the fastest-moving areas of computer technology."

Track 1 consists of three days devoted to the topic of "Software Design Strategies," conducted by Glenn D. Bergland and Ronald D. Gordon of Bell Telephone Laboratories, followed by two days on "Software Testing and Validation" and "Automated Software Tools," conducted by Edward Miller of Software Research Associates.

Track 2 consists of a five-day sequence devoted to "Local Computer Networks and Office Automation," conducted by Kenneth J.

Thurber and Harvey A. Freeman of Architecture Technology Corporation.

Track 3 begins with a three-day segment conducted by Rex Rice on the subject of "VLSI Design Technology," followed by two days on computer graphics, conducted by Kellogg S. Booth of the University of Waterloo.

All speakers, according to Fernandez, the principal coordinator of the event, have given similar presentations at previous Computer Society conferences in the U.S.

Registration fees for Tutorial Week Europe are $140 per day for non-IEEE Computer Society members, $125 for members. For program information write to Tutorial Week Europe, Box 639, Silver Springs, MD 20901.

AutoCheque

California Digital Engineering has added Autocheque, a complete personal checking system, to its line of microcomputer software.

In addition to the general ledger, Autocheque can also assign tax categories, break rent and phone lists into business and personal based on percentage, put credit card sub-entries in appropriate tax entries, and give the balance after checks are entered.

Autocheque's smart search program can locate any entry. The program also prints checks, converting the dollar value to plain English and putting it on the appropriate line. There are built-in protections so the user won't accidently wipe out files.

Autocheque is available from California Digital Engineering, Box 526, Hollywood, CA 90028, 213-661-2031.

Faire Smoking

By city ordinance, smoking is permitted only in the entrance lobby of the Civic Auditorium. It is explicitly prohibited in the conference halls, perhaps due to limited ventilation.

Meeting Someone at the Faire?

Suggestion: Ask friends and associates to meet you in the balcony area of the Civic Auditorium. Specify the left, right, or center section. It has ample seating and overlooks the Civic Auditorium exhibition area.

Note: The public address system is NOT available for paging individuals, except for medical emergencies.

Buying a Small Computer the Right Way!

If you're thinking about buying a desktop computer to use at your office, you could be letting yourself in for a costly and time consuming experience unless you approach your purchase the right way, according to Vernon Jacobs, author of "How To Get A Free Desktop Computer."Jacobs is a self-employed tax consultant and former corporate controller who has been using a small computer for nearly two years. His book offers guidance to the financial consultant or executive who is considering buying a small computer.

The book is published by Research Press, Inc., (Box 8137-P), Prairie Village, KS 66208. The price is $14.95 plus $1.50 for first class postage.

VideoNet Forms Consulting Division

Responding to the changing demands for videoconferencing services, VideoNet, a producer of videoconferencing programming, has formed a new Consulting and Training Division.

"Although videoconferences such as those we've produced for the past two years will continue to be a primary thrust of our business and future growth, we realize that they are only a part of the videoconferencing industry," VideoNet's President Gary Badoud stated. "Because of the hands-on experience we have, corporations are now looking to us to assist them evaluate and plan for permanent communications systems."

Badoud also stated that the company has opened an office in the San Francisco area and has moved its East Coast office in Stamford, Connecticut, into expanded facilities.

Since its inception in 1979, VideoNet has become recognized as one of the leaders in the videoconferencing industry. In September of this year, Oak Communications, Inc., the Rancho Bernardo, California, manufacturing and communications company, purchased 81 percent of VideoNet which has provided the company with enhanced financial, personnel and technical resources.

Conference Session

Courseware Production Made Easy

There is a growing interest in the use of microcomputers in schools, and a number of courseware generator systems have become available. In his 7th West Coast Computer Faire talk "MICROTEACH — Courseware Production made Easy," Thomas P. Bun will describe this system.

"The MICROTEACH System by COMPUMAX is characterized by a menu-driven approach, having the available options always visible on the screen, and leading the author through the subsequent stages of courseware development step-by-step," says Bun.

In his presentation, Bun will explain why an author using MICROTEACH doesn't have to learn any computer languages or become familiar with systems commands. Sample menus and commands will be shown for the product which is currently available on the ATARI 800.

Largest Venture Capital Package Ever!

A venture capital package of $8.5 million—believed to be the largest amount of money ever raised for a microcomputer company start-up—was announced today by a new Silicon Valley firm.

Fortune Systems raised the money from seven investors, which include Thomson-CSF, a multi-billion dollar French diversified electronics company; Greyhound Corporation; the Equity Group of First National Bank of Chicago; Banque de Paris des Pays-Bas; and Walter E. Heller & Co.

Other investors include two venture capital firms: Brentwood Associates and Asset Management Company, both of which have interest in numerous other computer companies.

Fortune Systems, which already has more than 65 employees, is presently in a 26,000 square foot plant located at 1501 Industrial Rd., San Carlos, CA 94070, 415-595-8444.

Corvus Disk and Network Systems Products for IBM and Xerox Microcomputers

New interfaces make Corvus Winchester disk drive systems and local area network compatible in hardware and software with two of the industry's latest entrants: the IBM Personal Computer and the Xerox 820 System. Corvus is a supplier of microcomputer mass storage systems and local area network market.

This compatibility means that users of the IBM Personal Computer and Xerox 820 computer can now enjoy storage capacities of 5, 10, and 20 megabytes on 5¼ inch and 8 inch Winchester disk systems.

Corvus also announced its Multiplexer local area network will support both the IBM Personal Computer and the Xerox 820. This will allow Corvus disk users to build a back-end area network that links up to 64 microcomputers and allows them to share disk storage and printers.

Early this year, OMNINET compatibility with the IBM and Xerox systems will be available. OMNINET is Corvus Systems' disk-independent, carrier-sense-multiple-access (CSMA) local network, introduced at the 1981 National Computer Conference. Already recognized as a leading low-cost alternative to more expensive coaxial-based networks like Ethernet, OMNINET extends the end-to-end network limit to more than 4,000 feet, lets users combine multiple microcomputers with different operating systems on one network, and uses twisted pair cabling.

Since 1979, Corvus Systems has shipped more than 5,000 mass storage systems for microcomputers made by such companies as Apple, Tandy, Cromemco, SuperBrain, Dynabyte, North Star, Vector Graphic, Altos and others.

COSIMA INTRODUCES THE CODAS 1000

The CODAS 1000 is a universal measurement and control system that interfaces to a host computer with communications via parallel, RS-232C, and IEEE-488. Targeted for scientific and industrial applications, this system provides resident or remote site real-time computer automation for scientific instruments and process control.

Any language or operating system may be used in the host computer because the "Friendly" CODAS 1000 is programmed (up to 64K Bytes) by a high level command set allowing simple specification of variables such as speed, channel number and measurements. Simplicity of programming is maximized through the generation of user prompts by an interpreter.

The CODAS 1000 includes a Z-80 microprocessor; 8K Bytes ROM; 64K Bytes RAM; 16 channel Analog to Digital converter with 12-Bit resolution-software programmable channels and Gain with Auto Ranger-30H system throughout; 4 channel Digital to Analog Converter with 12-Bit resolution; Real Time Clock with Battery Back-up; Counters; 32 Programmable I/O Control Lines; External Interrupts; Serial I/O Port-110 to 19.2K Baud; Parallel I/O Port with Handshaking; optional IEEE-488 I/O Port; 3 BNC Connectors for oscilloscope display of D/A outputs. The CODAS 1000 measures 16.9 inches wide, 12.7 inches deep and 3.5 inches high. Available in both desk top and rack mount cabinets, the CODAS 1000 is priced for less than $4,000.

For more information, please contact: Cosima Corporation, Box 12789, Salem, OR 97309, 503-370-9945.

Corvus has developed additional Winchester disk systems and interfaces for the Apple III microcomputer, NEC's PC-8000 system, and for the most recent Commodore Pet model. The company also manufactures mass storage systems for Digital Equipment Corporation's LSI-II minicomputer.

Corvus mass storage systems are building blocks in creating the Multiplexer local network. The software supplied with this network is called the CONSTELLATION. With CONSTELLATION software users can share access to centralized files via the Corvus disk controller. Firmware for the controller supports advance features such as sector buffering, automatic error retries, diagnostics, transparent formatting with CRC error detection, and high speed data transfers using direct memory access (DMA) to RAM within the Corvus controller.

In the case of OMNINET — already licensed to several microcomputer manufacturers who intend to incorporate it in their new or existing systems — gateways are already being developed that will connect the network to peripherals such as printers and modems. Corvus Systems said it has an SNA-compatible modem server under development. It will allow users of the OMNINET network to transmit data to and from IBM mainframes.
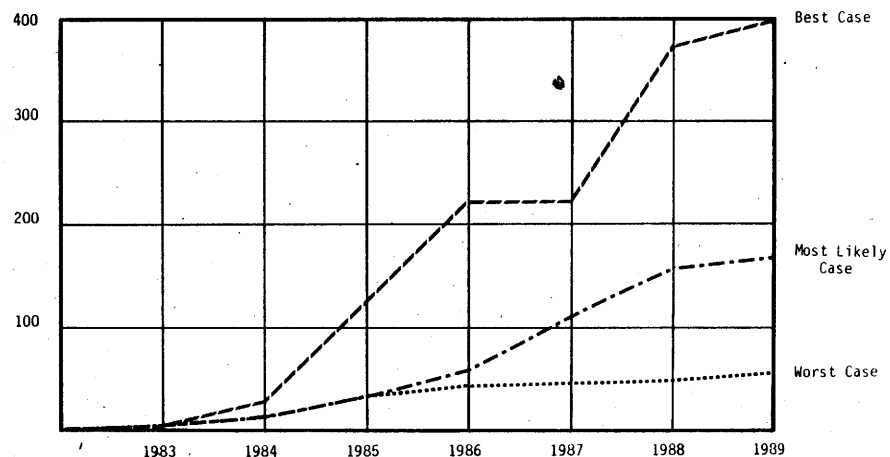
For more information, please contact: Corvus Systems, Inc., 2029 O'Toole Ave., San Jose, CA 95131, 408-946-7700.

TOTAL SHIPMENTS OF DIGITAL AUDIO DISC PLAYERS - BEST, WORST, AND MOST LIKELY CASES (1983-1989) (Millions of Dollars)

Possible $200 Million in Digital Audio Disks

The first new hi-fi components of the 1980's, digital audio disc players, are expected in the U.S. in late 1982 or early 1983. Using specially encoded discs, a system can produce an audio signal with extraordinary accuracy. For manufacturers and retailers, digital audio also holds out the promise of rejuvenated sales. According to a report just published by Venture Development Corporation, a Massachusetts consulting firm, sales of digital audio players to consumers will likely fall between $170 and $200 million by 1989.

Taking issue with some industry observers, VDC does not believe that the $400 million level in annual sales will be reached in this decade. As discussed in the report, "Professional and Consumer Digital Audio Equipment: a Strategic Analysis," many key problems which will affect market development have not yet been resolved.

While the majority of high-end audio retailers indicate they will pioneer digital audio disc players, many interviewed by VDC do not expect sales to be overwhelming initially. As one audio specialist warned, "You know what happens to pioneers — the Indians shoot them full of arrows."

Looking forward to 1989, VDC notes several factors which will affect markets for consumer and professional digital audio equipment:
- the issue of standards
- Industry acceptance of the CBS compatible expansion (CX) system
  - software availibility
  - new technology.

The standards question seems likely to be the most difficult to resolve. While the Sony/Philips compact disc format will be the first format introduced, it may not be the only one. There could be a replay of Beta versus VHS, if Matsushita moves to promote its own digital audio format. Venture Development's market scenarios indicate that a format struggle could have significant adverse impact on sales growth. Sales of professional digital audio equipment could also be adversely affected, since demand for digital discs would presumably be lower if there were a smaller installed base of digital audio players.

For more information, please contact: Ann M. Conway, Market Research Analyst, Venture Development Corporation, One Washington St., Wellesley, MA 02181, 617-237-5080.

7th Computer Faire Exhibitors
(as of Jan. 8, 1982)

Exhibitor	BOOTHS
3M Data Recording Products Division	1219C, 1221
A. I. D. S. Compu-Center Stores	429E
Acorn Software Products	103
Addison-Wesley Publishing Co.	1224, 1226
Advance Data Corportation	1839C
Advanced Computer Controls	87
Advanced Computer Products	1420H
Adventure International	1428H
Allen Gelder Software/ALGORIX	1649
Alpha Computing Supply, Inc.	112C, 111
Altos Computer Systems	1342C, 1344
Amdek Corporation	509, 511
American Word Processing Co.	1519C, 1521
Anchor Pad of Northern California Inc	1636, 1638C
Anvil Cases, Inc.	1720
Applied Microcomputer Technology	607C, 609
Arcadian Newsletter	2022
Arrow Computer Supply	113, 114
Artec Electronics Inc	220, 222C
Ashton-Tate	218
Atari, Inc.	1532
Avant-Garde Creations	1623
Axlon, Inc.	1537, 1539C
Bench Collection	1523
Berkeley Microcomputer	1614C
Beta Computer Devices	1714C
Broderbund Software	1411S
Buss-Independent Heath/Zenith Newsletter	327H
Byte Publications, Inc.	519, 521, 523C
C. D. E. Software	F2 2017
California Computer Systems	418, 420, 422C
Calsoft	1610
Casheab	93
Caxton Publishing Company LTD	312
Checks-To-Go	101
Citizens Tech & Employment Program	25P
Coast Computer Supply	1332
Commercial Mailing Accessories Inc	1530
Commodore Computer Center	107, 108, 109, 110
Commsoft	212
Community Health Information Project	26P
Component Sales, Inc.	1105C
CompuPro div. Godbout Electronics	1548H
Compute! Magazine	1543C, 1642C
Computer Camp Inc	95
Computer Discount of America	1012C
Computer Furniture & Accessories, Inc.	1618C, 1620
Computer Shopper	1011
Concord Computer Products	1336, 1338C
Creative Computing	1510H
Creative Publications	617
Cromemco, Inc.	1223, 1225, 1227, 1229
Cybertext Corporation	92
Dasoft, Inc.	1446
Data Compass-Peripheral Products Group	219
Data Technology Industries	105, 106
Datamation	205C
Diablo Systems, Inc.	317, 319
Dialog Information Services, Inc.	1536
Digital Research, Inc.	421, 423C
dilithium Press	321, 323C
Double-Gold Software	86
Durango Systems Incorporated	L 1008, 1009, 1010
Dysan Corporation	406C, 408, 410, 412
Eakins Associates, Inc.	1318C
Elcomp Publishing, Inc.	1208
Electronic Systems Furniture	1518C
Empirical Research Group, Inc.	1444
Encyclopaedia Britannica	311
Forth Interest Group	1343C, 1442C
Fotocomp	89
G and G Engineering	1538C
H & E Computronics Inc.	209C, 211, 213
HW Electronics	1310H
Hard Disk Subsystem Manufacturer	310
Hayden Book Co	206C, 208
Hayes Microcomputer Products, Inc.	1632, 1634
Heath Co.	221, 223, 225, 227C
High Tech Software Prod	115
Houston Instrument	1436H
Howard W. Sams & Co., Inc.	1204C, 1206
Huntington Computing-Hardware & Software	1719C, 1721
ISA-Spellguard	1210
Imprint Software	94
Information Unlimited Software, Inc.(IUS)	116W, 604C
InfoWorld	1425, 1427
Inmac	616
Inner Access Corporation	1345
Interactive Business Solutions	1551C
Interactive Fiction	2018
Interface Age Magazine	528H
International North Star Users Assn	15L
Island Graphics	1639C
JDR Microdevices, Inc.	2014, 2015
Jadde Computer Products	1410S
Japan Microcomputer Club	612, 614
John Bell Engineering	407C, 409
John Wiley & Sons, Inc.	1505C, 1507
Kern Publications	1334
Krown Enterprises	608C
L-5 Society, Bay Area Chapter	23L
Lifeboat Associates	1525, 1527, 1529, 1531
Little, Brown and Company	85
Lum Buckles	615, 514
MUMPS' Users Group	28L
Macrotronica, Inc.	1526
Magna Soft	91
Magnolia Microsystems, Inc.	327H
Marinchip Systems	306C
Matthew Jew & Eric Kilk	1520
McGraw-Hill Book Company	215
McGraw-Hill Book Company	217
Memory Merchant	1347
Merrill Lynch, Pierce, Fenner & Smith	13322
Micro Ink, Inc.	1629, 1631
Micro Technology Unlimited	1029
Micro-Ap, Inc.	104C
MicroAge Computer Store	414, 416
MicroComPac	1346
MicroDaSys, Inc.	1212, 1214C
MicroPro International Corp	1302H
Microcomputer Consultants	210
Micromation, Inc.	520, 522C, 621, 623C
Morrow Designs	1522, 1524
Mountain View Press	1349
Oasis Systems	1228
On-Line Systems	1411S
Options Research	513
Oracle Electronics & Trading	1429, 1430, 1433, 1435, 1437, 1439C
Orange Micro, Inc.	1613, 1615C, 1611
Original Apple Corps	28P
Osborne Computer Corp.	426H
Osborne McGraw Hill	424C, 525C
PALHMA Systems	611, 613
Pacific Mountain States Corp.	1218C
Pacific Software Manufacturing Co	411
Panamax Line Conditioning	2013
Passport Designs, Inc.	1027C
Patrick & Co.	1533, 1535
Percom Data Co.	1635, 1637
Performance Software Corporation	1236, 1238C
Phase One Systems	1243C, 1245
Philips Test & Measuring Instruments	1718C
Prentice Corporation	1115C
Prentice-Hall, Inc.	313, 315
Program Design, Inc. (PDI)	1348
Quality Software	307C, 309
Quest Electronics	320, 322C, 316, 318
RCA	622, 624, 626C
Racing Services, Inc.	1528
Radio Shack	1502H, 1509, 1511
Reston Publishing Company, Inc.	1545, 1547
Rothenberg Information Systems, Inc.	515, 517
SSM Microcomputer Products	1419C, 1421, 1423
SZ Software Systems	1628
San Francisco Apple Core	1515C
Santa Cruz Educational Software	1612
Sebree's Home Computers	1324
Select...The Word Processor	619, 1100W
Shasta General Systems	1734, 1736, 1738C
Sigma Sales	1237, 1239C
Sinclair Research Ltd.	1119C, 1121
Sirius Software, Inc.	100W
Skyles Electric Works	1619C, 1621
Softape	1739C
Softsel Computer Products, Inc.	1220, 1222
Sorcim Corporation	1704C, 1706
Southwestern Data Systems	1625
Stacey's Bookstore	1326, 1328, 1330
Stahler Co.	90
Strawberry Tree Computers	1608
Structured Systems Group	413, 415
Sybex Inc	516, 518
Synapse Software	1552C
Syntauri Corporation	507C
T G Products	1715C
TNW Corporation	1320
TSE-Hardside	1605C, 1607, 1609
Tab Books Inc.	1627
Taranto & Associates, Inc.	506C, 508
Technical-Soft, Sanwa Shoji Inc	1208
Technology & Society Committee	27P
Texas Instruments Incorporated	1448, 1450C
The Casemaaker	84
The Purchasing Agent	314
Trace Systems, Inc.	1643C
Verbatim Corporation	1633
Videx, Inc.	510, 512
Vodex- A Votrax Company	417, 419
WIP (Women in Information Processing)	26L
Wabash Tape Corporation	1604C, 1606
Wayne Green Inc.	1705C, 1707
Webster EcEvoy Documentation Srvcs	40
West Coast Business Products, Inc.	1513
Western Micro Systems	618, 620
Yumm Inc.	214, 216
Zircon International, Inc.	1534

7th West Coast Computer Faire

7th Faire Conference Papers

The following is sampling of the papers — proposed for presentation in the Conference Program of the 7th Computer Faire — that have passed preliminary screening as of the press date of this Gazette.

This is only a partial list. Based on the papers currently received and circulating through the refereeing system, the Conference Program is expected to include over 100 speakers. Note: Registration for the Faire covers admission to the exhibits and to the Conference presentations.

MISCELLANEOUS APPLICATIONS

A Microcomputer-Based Geographic Information System
    Benjamin Pierce, Stanford University
More for Less: The Microcomputer in Local Goverment
    M.J. Groat, City of San Francisco
The Well Behaved Home
    Carter Compton Collins, University of the Pacific
Computer Assisted Design of Tiffany Lamps
    Mike Higgins, Space Glass
Computer Animation Comes to Personal Computing
    David Fox, et al
Simulation Training Research with Microcomputer Systems
    Allen Munro, et al, Behavioral Technology Labs
Interpas and Rascal: A Playful Pascal Cartoon Programming System
    Michael Moshell, et al, Gentleware
Speed Reading and Peripheral Vision Techniques for Computers
    Myron Zeissler, Eagle Software
A Fifth Generation Amateur Radio Repeater Controller
    Ed Ingber, Advanced Computer Controls
Snail Graphics: A Graphics Kit for Runic
    Marty Franz
Increasing Throughput with the Dvorak Keyboard
    Don Fitchhorn, et al, Tandy/Radio Shack
The Word Processing — Phototypesetting Interface with Automatic Pagination
    Donald H. McCunn, Design Enterprises of S.F.

MUSIC

The Medieval Melody-Maker: A LISP Program
    Arthur Hills, Sonoma State University
The Soundchaser Computer Music System
    David M. Kusek, Passport Designs

TECHNOLOGY

A Bionic Approach to Speech Processing
    Bradley C. Stewart, Covox
FIFO's: Rubber-Band Memories to Hold Your System Together
    Chuck Hastings, Monolithic Memories
Reaching Out — Computer Communications Means More Terms and Standards
    David L. Shaughnessy, U.C. Berkeley
Enhancing Your Apple II: Exact Field Sync
    Don Lancaster, author
A Thermometer in an Apple for Agriculture, Home and Laboratory
    Walter Maclay, Strawberry Tree Computers
Simple Communications Between Apples
    Keith E. Schubert, Blue Mountain Community Coll.
Inexpensive Expansion for Your 6502 Computer
    Winfried Wofacker
The IEEE-488 Bus for Personal Computers: An Overview
    Peter Baum, Apple Computer
Evaluation of Your Pascal, Basic or Fortran
    Alan R. Miller, N. Mexico Tech & Interface Age Mag.
MINIX: A Minimum Executive — or — What to Do While Waiting for a Long Printout
    Tom Pittman
Microprogrammable Filter
    Kiran Majithia, et al, IBM & San Jose State Univ.
Fifteen Variations on a Theme: A Computer-Oriented Algorithm
    Dmitri Thoro, et al, San Jose State University
Design Automation Techniques
    David W. Russell, Dasoft Design Systems
The Initial Graphics Exchange Specification: A Key to Future CAD/CAM Systems
    Paul Hollingshead
Four Switchable Keyboards for Computers
    Albert Kolb, Carmel Middle School (California)

MISCELLANEOUS

Writing for the "Special Interest" Computer Press
    John Walker, Sextant Magazine
The First Computer/Videodisc Game: A Glimpse into the Future
    David H. Ahl, et al, Creative Computing
The Microcomputing Industry Today and Tommorrow
    Rodnay Zaks, Sybex

Civic Auditorium Mezzanine Floor

Brooks Hall
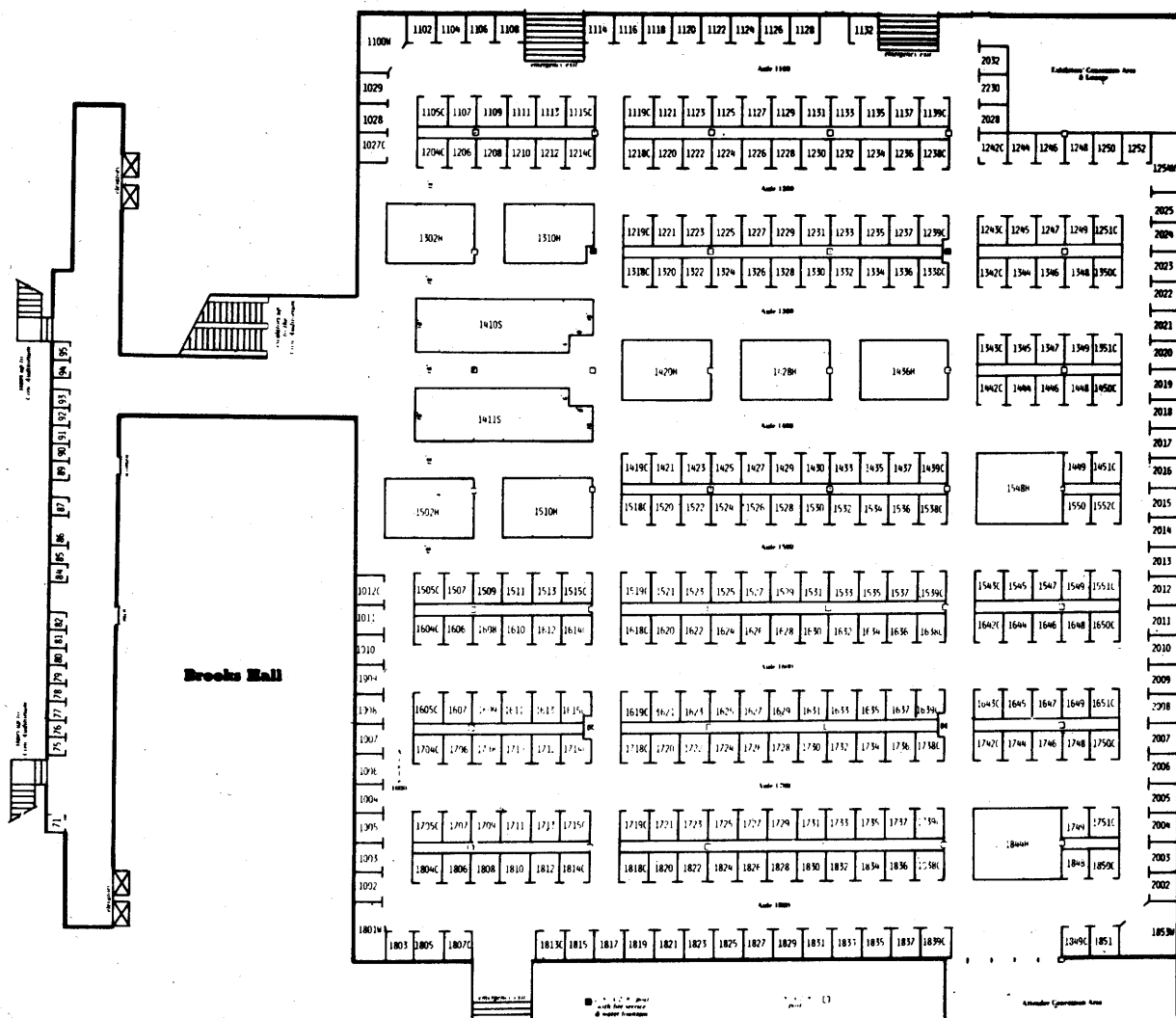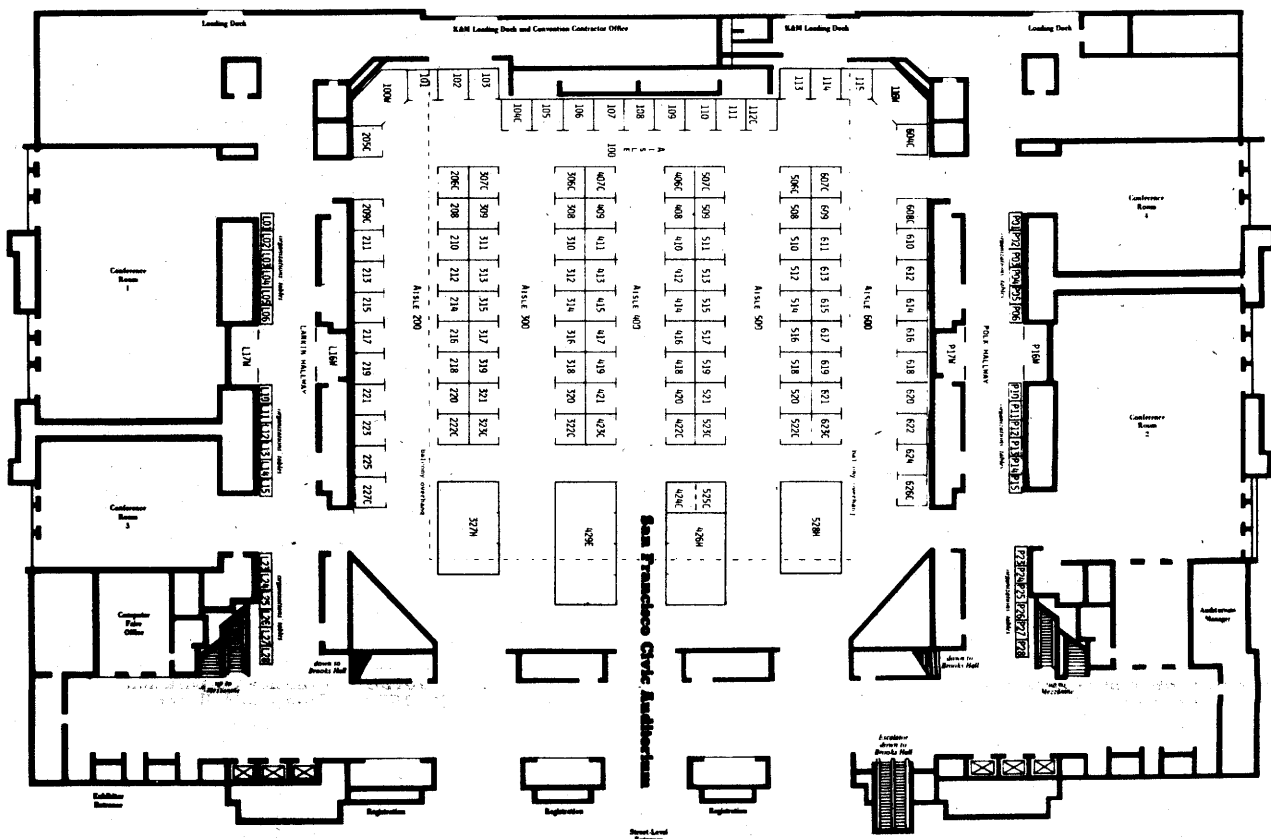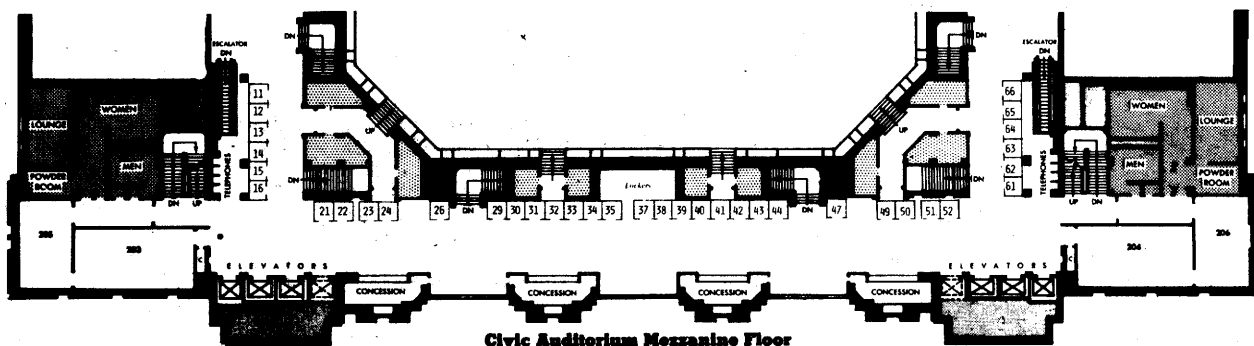
Vector Graphic Introduces ExecuPlan II

Vector Graphic has introduced ExecuPlan II, a new version of its financial modeling and planning software. ExecuPlan II offers remote access, new sort and if-then-else and logical operator capabilities, interfacing to programs or data bases written in BASIC, FORTRAN and other high level languages.

ExecuPlan II features include a remote access command; a display of numbers in accounting format with parentheses or trailing or leading minus signs; resolution of forward references by automatic calculation of formulas, thus permitting recursive/iterative functions; formula compression for increased data storage; and selective clearing of any component of a model without affecting other data.

ExecuPlan operates on all Vector microcomputer systems and the newer multi-user Winchester disk systems such as the 5005 and 5032. Cost of ExecuPlan II, which is available through Vector dealers, is $150.00.

More information on ExecuPlan II and Vector microcomputer systems is available from Vector Graphic, Inc. at 500 N. Ventu Park Rd., Thousand Oaks, CA 91320, 805-499-5831.

WAVEMAKERWAVEMAKERWAVEMAKERWAVEMAKER
EDIT WAVEFORM
ENTER PRESET NUMBER 0-9:5
SELECT X = 107   Y = 106
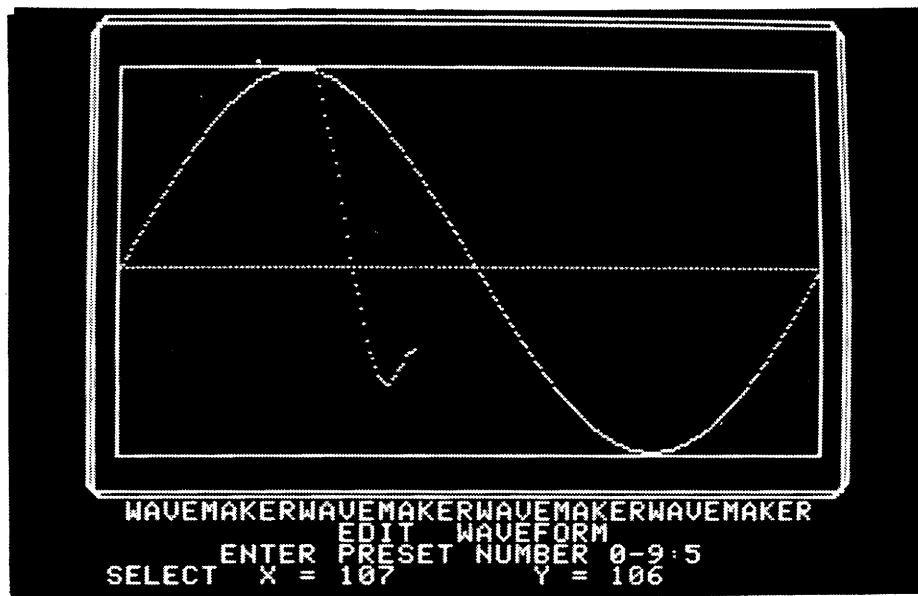
Passport Designs adds Soundchaser Digital

Passport Designs continues to develop the SOUNDCHASER Computer Music System. Based around the Apple II, SOUNDCHASER is both a digital and analog polyphonic synthesizer, a music transcriber, and a music educator.

Passport Designs announces it's Digital Performance Software which turns the Mountain Computer Inc. Music System into a powerful and flexible polyphonic synthesizer with advanced recording features. The software lets you define presets or "instruments" by drawing the waveforms and controlling them with envelope generators, low frequency oscillators and effects generators. SOUNDCHASER Digital is an eight voice synthesizer. Each voice consists of two digital oscillators each with its own ADST amplitude envelope. The programmable LFO's let you add subtle vibratos and give the instrument a rich, "fat" sound. The effects generators let you dynamically modify the oscillators' waveforms in memory for phasing, filtering and timbre changes.

SOUNDCHASER Digital revolves around the Music Keyboard and to a certain extent the Apple Keyboard. All voice parameters are displayed and are alterable during performance letting you hear the results of any parameter change instantly. The performance features include a very sophisticated multitrack sequencer. The sequencer lets you store and playback whole orchestra arrangements by repeatedly recording and layering the individual parts. The sequencer is fully polyphonic and records not only the keyboard information but the preset being played as well. This feature exploits the programmable nature of the Music System by letting you produce many different timbres at the same time. You can also play live on the Keyboard while your sequences are playing back.

SOUNDCHASER Digital (Keyboard & Performance Software) lists for $650. The MCI Music System (16 Oscillators, digital) lists for $395. For more information, please contact: Passport Designs, Inc., 785 Main St., Half Moon Bay, CA 94019, 415-726-0280.

Courseware Demand may Outstrip Supply Two to One

For the next five years demand for educational microcomputer software will outstrip supply two to one, according to a recent report by TALMIS. Although publishers are gearing up, the development process for courseware is fairly lengthy so that the growth in available commercial quality courseware will be slower than the growth in the installed base of microcomputers in educational institutions. Demand for educational courseware is expected to be at least $75 million by 1985, rising from sales of $10.7 million for the 1980-81 school year.

While educational and audiovisual publishers are the newest segment of the courseware industry and currently have the lowest market share except for government agencies, by 1985 they are expected to account for over half of all courseware sales. Software houses, on the other hand, which are now in first place with 42% of the market, are expected to fall to second place by 1985.

The TALMIS report, The Educational Software Market, was based on surveys of all major educational software publishers and a sampling of small developers within the industry. TALMIS itself is an information service for members of the interactive educational and training media industry. For more information on TALMIS, please contact: Jeanne Dietsch, TALMIS, 115 N. Oak Park Ave., Oak Park, IL 60301, 312-848-4000.

The Well Behaved Home

For a home to be truly organized today it helps to have a home control system that not only feeds the cat and waters the plants, but turns off lights after people leave a room, irrigates a dry vegetable garden, and greets guests with a spoken message.

Carter Compton Collins developed just such a system as a hobby and will talk about his "Well Behaved Home," at the 7th West Coast Computer Faire.

"Computer control of the home has long been a dream of many visionaries," says Collins, an associate professor at the University of the Pacific, "The real secret of success lies with peripheral input and output devices with which the microcomputer can exert control of the environment. The peripheral functions I describe here are some I could design and readily build at home in a few weekends each."

Illustrations and diagrams accompany Collin's paper which will be published in the *Proceedings of the 7th West Coast Computer Faire*, available at the show.

Vector Graphic Moves Headquarters

Vector Graphic has moved into its new 120,000 square foot headquarters at 500 N. Ventu Park Rd, Thousand Oaks, California, consolidating corporate, engineering, marketing, and production groups that had outgrown previous separate facilities. Representing a $2.2 million investment, the new headquarters, about eight miles from the company's former Westlake Village, California location, is nearly four times the size of previous facilities.

Editor's Gossip. . .
(continued from page 4)

the arrival of our first viable archiving and data transfer facility . . . which appears likely to arrive, here, before this *Gazette* arrives at your place, thanks to a very cooperative DSM & Assoc.

HELP!
We know there are professional slave ships that provide eternal data entry keyboarding services, and we need some of that service (e.g., we still have to enter some of the attendee statistics from last year's 31,-700+ Computer Faire attendees). But, we don't know where such services are. If you know of someone who is reputable and economical, please drop us a note.

BILLIONS
(A computer application, no doubt) The Mohawk Valley Section of the IEEE has pointed out that:
A billion seconds ago, we were in World War II, prior to the A-bomb.
A billion minutes ago, Christ was still around.
A billion hours ago (57,000 years), cavemen — and cavewomen — were praying to black obelisks from the sky.
But, a billion dollars ago (newspapers use that as a shorter version of $1,000,000,-000.00) was just yesterday in terms of 1981 U.S. government expenditures.

APPLE WORDZ
One of our more reliable Apple saurces (sic, sic, sic), sez that Apple is shipping 25,000

Bionic Speech Processing!

Bradley C. Stewart of the Covox Company says he has "a novel and useful method of processing human speech for machine interpretation." This method is based on the Covox Analog Processor, a Bionic analog processor which extracts the fundamental cues of speech.

"These slowly varying cues reveal those specific features of speech sounds which are associated with intelligibility. And it does so in an optimum noise resistant manner," Stewart says.

In his 7th West Coast Computer Faire presentation, Stewart will discuss the shortcomings of conventional human speech processing, spectral analysis, human speech cues, and applications. The Covox Co., of Santa Maria, California, markets a speaker independent voice commander for use in industrial applications.

PCBH-10 PC BOARD HOLDER

OK MACHINE AND TOOL CORP.
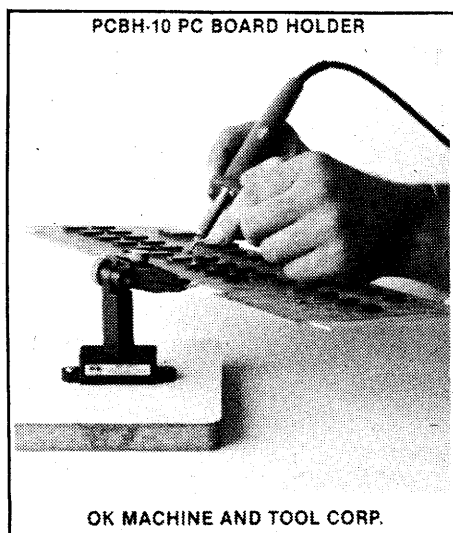
O. K. Board Holder

O. K. Machine and Tool Corp. has introduced its printed circuit board holder, PCBH-10. This PCB holder has a recessed base for mounting in a vise, or may be affixed directly to a workbench by using the two screws supplied. Self-adjusting jaws hold any size PC board for stuffing or soldering. For maximum flexibility and convenience, the board can flip over more than 180 degrees, rotate a full 360 degrees, and stop in any position. Priced at $6.95, the PCBH-10 is available from electronics distributors and retailers or directly from O. K. Machine and Tool Corporation, 3455 Conner Street, Bronx, NY 10475.

Computers Hit the Streets

The distant rhythms of computer technology were harnessed to the breathing of long distance runners last October 25 for the 8th running of the famed New York Marathon.

Computers did, in a way, hit the streets a few years ago with computer-aided designs for improved running shoes, and it was only a question of time before computers would directly impact the very clothes of the runners.

For the first time, the more than 16,000 runners from over 35 countries wore computer-generated bibs — complete with machine-readable bar codes and 3-inch high identification numbers.

Three high technology firms joined their products together to form the unique system. They were Printronix, Inc., Irvine, California, manufacturer of impact matrix line printers; Computer Identics, Westwood, Massachusetts, maker of bar code readers and scanning wands; and Quality Micro Systems, Mobile, Alabama, a leading systems house and producer of packages in "intelligent" microprocessor controller boards.

The race marked the first application in marathon history in which machine-readable bar codes were produced by computer-driven printers — on the spot.

Bar code markings are familiar to all of us, most notably, perhaps, on just about every item on the supermarket shelves. The alternating black and white bars are designed to store, or code, large quantities of information in a small space. They are easily read by scanner wands, and can be quickly transmitted to waiting computers.

In the New York Marathon's application, the bar-coded area on the 8 x 10-inch runner's bib required no more space than a theater ticket to store individual runner information such as the entrant's special registration number, sex assigned class, and in 1,000 cases, the "seeding" number.

No other marathon in the U.S. has as many runners as does the New York Marathon. Bar codes have evolved as a storage medium for the variety of data tabulated during registration and completion.

Bar codes were also used in 1980, but in a less sophisticated manner. They were pre-printed at a New Hampshire printing company, shipped down to New York, and, during registration, hand-stapled to an entrant's previously numbered bib. It was a time consuming and expensive process.

The key to making bar codes work inexpensively and quickly was possible with the use of four 300-line-per-minute matrix impact line printers from Printronix. The P300s print overlapping individual dots so precisely that completely legible and easily recognized numbers, letters and lines are formed.

Last October's New York Marathon runners saw their bibs generated in six seconds, complete with bar coded information and numbers.

The "brains" of the printers were provided by QMS with a small 10 x 12-inch controller board that was mounted inside the printers. This board told the waiting printer that information was being read to it via Computer Identic's scanner wand, and that each piece of information was to be printed in a specific location and in designated sizes onto the bib.

During the four days of registration, the four P300s generated more than 16,000 bibs — translating to a 2 x 2.5 mile area, or five square miles.

Perhaps the most poignant realization of just how fast and how far computer technology had come was when Noel Johnson crossed the finish line.

Johnson is 82 years old, and was running marathons when New York City barely had its traffic lights.

InfoSoft Goes "Down Under"

InfoSystems, Inc., the systems software house, has announced that AED Microcomputer Products is the exclusive agent for the entire line of InfoSoft's microcomputer software products in Australia, New Guinea and New Zealand. The emphasis will be on Info-Soft's family of operating systems.

WANT ADS

For Sale: any or all of 10 Soroc IQ-120 terminals, includes one topless model (chain-saw art — Jim didn't like the fan whurring in his bedroom, so provided other ventilation). All are currently in use by Faire gnomes. 415-851-7075 evenings (west coast time).

Genuine 6th Computer Faire T-shirts. Mitch, P.O. Box 1688, Palo Alto, CA. 94301

Any or all available: five 64K S-100 RAM boards, all "strapping" options DIP-switched, now in use. 415-851-7075 evenings (w.c.time).

Several (legal) KTS telephones available: these are the kind with the 6 buttons at the bottom, Touch-Tone "dials". Why rent when you can own? 415-851-7610.

May be available after March: Zenith (Heath) Z-89 including 64K, 5-¼" drive, dual 18" Data Compass drives, CP/M and HDOS, misc. software pkgs. 415-851-7075 evenings.

May be available after March: California Computer Systems CCS-300 CP/M system including 64K, dual 8" drives, CP/M and Oasis. 415-851-7075 evenings (w.c.time).

Expected to be available in February: About ten 5MB CDC Hawk cartridges and five 15MB CDC Phoenix cartridges (used on Alpha Micro system), no longer needed for backup. 415-851-7075 evenings (w.c. time).

May be available after March: Teletype Model-40 chain printer, 132-columns, upper & lower case chain, floor-mount sound enclosure, printing 120,000 address labels at the time of this writing. 415-851-7075 evenings. (w.c. time)

May be available around June: King Kong type Alpha Micro system, over 1/3 MB of memory, twelve RS-232 ports, 6-platter 90MB CDC Phoenix drive, 2-platter 10MB CDC Hawk drive, 8" Wango dual floppy drive, Dravac encryption board, AMOS, Alpha Accounting Package (elderly), Syndex database system, miscellaneous other applications pkgs. The Faire's workhorse for several years. 415-851-7075 evenings (w.c. time)

Genuine antique PDP-8/I, 16K core, 4 DEC tape drives (TC-01, TU-55's), twin 6' racks, weighs under one ton, OS-8, Dibol, etc., $2K to a good home (or even to a glue factory). 415-851-7075 evenings (w.c. time).

New RM/COBOL on Zilog's System 8000

RM/COBOL has been installed on Zilog's multi-user 16-bit computer system based on an enhanced version of the UNIX operating system, announced Ryan-McFarland Corporation Software Products Manager Michael Saccomano.

The System 8000 uses Zilog's advanced ZEUS operating system and is designed for the general business environment.

"Applications software developed for the MCZ series is easily transportable to the new system," Doka says, "insuri-ing compatibility of our systems and offering our users access to a substantial community of existing software products designed to run under RM/COBOL."

Ryan-McFarland's latest installation represents their continuing marketing efforts aimed at OEMs and systems houses providing microcomputer based business systems. RM/COBOL now runs under 20 different operating systems, on 10 different CPUs. For further information on RM/COBOL, please contact: Ryan-McFarland, 3233 Valencia Avenue, Aptos, CA 95003, 408-662-2522.

SYBEX Winter Books

The new Sybex Winter Computer Book catalog is now available. It's an up-to-date reference guide to all current editions of the wide range of books and software published by SYBEX, the Berkeley-based publishing house. This catalog provides the latest information about new titles and revised editions of earlier books.

For more information, please contact: Jane Yeung, SYBEX, INC., 2344 Sixth Street, Berkeley, CA 94710, 415-848-8233, 800-227-2346.

Conference Session

Management Delivers with Electronic Mail

"Many members of today's boardrooms were coming into industry at a time when the tape or wire recorder and the ball-point pen represented the most dramatic hardware changes of the preceding 30 years, so it is clearly understandable that the developments of the past five years are barely possible to grasp," says Bernard Husbands in "Participative Management via TELEMAIL."

In his talk at the 7th West Coast Computer Faire, Husbands will discuss commercial electronic mail — "one of the technological infants waiting on management's doorstep" — and the use of TELEMAIL as a management conference technique.

"The acceleration of technology is presenting upper management with such a long menu of new options that few have the time, training or interest to explore them fully," says Husbands. His paper will be published in the *Proceedings of the 7th West Coast Computer Faire,* available at the show in March.

Editor's Gossip...

Apples a month (yup ... 300,000/year). They also say that Apple has a single-board Apple bud that uses only about 12 chips and could sell for about $300, but won't be introduced until the market is optimal (presumably when sales of the Big Apple begin to drop off).

MAKING THE BIANNUAL ELECTRONIC JOB-HOP EVEN EASIER . . .

IEEE (the Institute of Electrical and Electronics Engineers) announced an interesting new member service — a "Professional Abstracts Registries". This is a computerized national employment information system. For more info, call 800-431-2616 (or 914-762-2522 in NY state).

WORTHY COMMENTS

Dave Gomberg, an ex-computer distributer and long-time computer pro recently said that a manufacturer's questions *should* be: "What's the right way to solve a problem?" then, "Can we afford to do it?", rather than merely, "How much does it cost?"

And, we don't care if it is saccharin: "The world should always be a little better because a man [person] has lived." — Lord Fauntlroy's mother.

WORD MONGERING

This issue's award for outstanding (or is it outrageous?) word wrangling must go to The Calculating Lady Computer Services of Marina del Rey, California.

Then there was the comment that Logo is Lisp in Basic drag.

While we're being groupish, Stanford University folks feel that LOTS (their DEC-20 student time-sharing system) must stand for Largely Overloaded Time Sharing. Others have noted that SHARE is a service system for lots of VAX's.

A lurid observer of the computer scene suggested that internal documentation must be for computer hackers (ug!).

Finally, we were rolling on the floor from a carefully unattributed satire we recently received, postmarked in Denver, having to do with such ficticious characters and publications as Whine Brown, *Blyte,* a radio rag called *10-4,* etc. Sadly, we cannot share it with our readers, since we do not wish to support attorneys pursuing slander suits. But — we would like to know who wrote it ... please?

YOUR VERY OWN PHONE SYSTEM

You do know, don't you, that you no longer have to eternally rent your phone gear from the local telecom monopoly? Among other things, we have run across a dandy 16-station microprocessor-based, 2-wire phone system from Mitel (a Canadian firm, also big in the semiconductor racket) for a very

Sears Folks Should Discover It's No Longer 1960

editorial by Jim Warren

We recently received our computer-printed monthly statement for our Sears charge account. It showed that we had ordered a "catalog sale 03" for $108.73. Though we have ordered many items from Sears, we never ordered a "catalog sale 03". (We don't even know what it tastes like.)

SEARS CATALOG ORDER DIDN'T KNOW

We called the catalog store from which we order most items. They asked for the store code printed on the bill. We read them everything that was printed on the bill; none of it was a store code.

They asked us to bring the bill in for them to look at it (an hour, round trip — contradicting the main attraction of catalog shopping by phone). We objected. They said they'd try looking through their orders for the last month; see if they could find it, and call us back.

NEITHER DID SEARS ACCOUNTING

We called the store that maintains our charge records. The Accounting Department phone rang about 20 times.' The operator came back on at one point, stating that the Accounting Department was short-handed and really swamped. No doubt!

After about 15 minutes of waiting and talking, Accounting stated that, in our case, "catalog sale 03" actually ment "$BIND 10X25X50" and was from the office products division.

Oh! We blush to state that we don't know what a "$BIND 10X25X50" is, even after shopping at Sears for 20 years and programming computers for 14 years.

But, then again, neither did Accounting. For that matter, neither did the store's office products department . . . and they were too busy to look it up.

IS IT THE SEARS JOB CORP PROGRAM?

This had taken most of an hour of our time, and it took well over an hour of Sears staff time (a fact that should certainly interest any competent manager).

In the course of our conversation with Accounting, we asked if this kind of query was made, often. Our contact said it happened, constantly! Apparently we were not the only ones unable to decipher cryptic computer comments.

CP/M and Display MTI Mod III

Micro Data Base Systems, Inc. has announced the release of MDBS III, a data base management system for the PDP-11, 8-bit micros and 16-bit micros. Targeted for application software developers, this new product is available under numerous operating systems and can be used in conjunction with many programming languages (including BASICs, FORTANSs, COBOLs, PASCALs, PL/1 and C).

MDBS III supports extended-network data structuring, surpassing the old heirarchical relational and network approaches to data base management. Along with its logical data structuring features, MDBS III's design facilities provide the application developer with extensive control over physical data structuring.

The implementation of MDBS III utilizes a proprietary access mechanism that is not based on the chaining or pointer array approaches. Three distinct user interfaces are available with MDBS III, ranging from a host language data manipulation language to an English-like, non-navigational query language. Extensive data integrity and data security features are provided. Selective rollback is supported for data base recovery. Multi-user versions of MDBS III are scheduled for release in the next few months.

For more information, please contact: Micro Data Base Systems, Inc., Box 248, Lafayette, IN 47902, 317-448-1616.

Since Sears has many thousands of credit card customers, they must be wasting at least thousands of hours of staff time (Sears contribution to minimizing unemployment?), as well as wasting a similar amount of customer time (value: $0.00?), just due to this one myopic component of their computerized credit systems design.

COMPUTERS SHOULD HELP; NOT HINDER

Computers can and should make things easier; not more difficult. Computers can reduce staff labor. And, they can make business interactions more palatable — not less comprehensible, when used in a manner convenient for the customer and the staff (rather than the manner most convenient for the data processing systems designer).

But, our d.p. friends rebut, perhaps Sears has too many transactions to be able to log each one of them in an intelligible form on the monthly statement. Not so.

Example: We recently ordered five items. One was sent; we received a computer notice of the disposition of the other four items (reorder, back-ordered, verify price, etc.). That notice identified each item. If they can do it on a notice where they want us to reorder, they can do it when they want us to pay.

Example: The phone company manages to give comparable identifying information on each transaction for which it bills (city name compares to product description; phone number compares to catalog number).

Clincher: Sears may not have the computing ability to identify items in their billing statements in a manner intelligible to the customer or their sales or accounting staff, however they do have the resources to computer-print a 238-character "Wrap up a beautiful Christmas . . . " sales hype at the bottom of the statement.

Come on, Sears. Give us some evidence that you ARE capable of implementing a humane computerized billing system. Surely, if the phone monoloply can do it, Sears can do it.

At a minimum, it would save Sears significant staff time (and, thereby, staff dollars). To do less is not only inconsiderate of your customers; it illustrates incompetency in business and data processing management.

P.S. — Sears eventually called back and stated that the item was a pair of binoculars, discovered by digging out the original order from their daily paper records . . . jus' like in pre-computer days.

Conference Session

Towards Computer Literacy

"The problem of designing a computer curriculum for teachers must be addressed soon if we are to hope for students to play an intelligent role in the technological future of this country," says James D. Milojkovic of Stanford University's Interactive Educational Technology Program.

Milojkovic's 7th West Coast Computer Faire talk "Towards Computer Literacy," will explore the concept of computer literacy and the problems involved in implementing a curriculum for it. The Committee on Computer Education of the Conference Board of the Mathematical Sciences defines computer literacy as an understanding of computer capabilities, applications, and algorithms. Milojkovic's talk touches on these points and much more.

"The goal of computer literacy for all is not merely desirable — it is a necessity," says Milojkovic. His presentation will be published in the *Proceedings of the 7th West Coast Computer Faire*, available at the show in March.

Autograph 1000

MQI Printer Complements Graphics Terminal

A serial matrix impact printer to record graphics displays and alpha numeric data generated on the Autograph 150 Graphics Display Terminal is the newest offering from MQI Computer Products.

The combination of display and printing capabilities makes the Autograph series of graphics terminals into work stations for all types of graphics systems. Whether used as a remote time share terminal at 1200 baud, or directly connected to a computer at 9600 baud the Autograph 150 and the 1000 printer offer the user functionality, and compatibility with most graphics software.

The Autograph 1000 functions as a "scratch pad" printer to record the 250 x

512 resolutions pictures displayed on the Autograph 150 "preview" screen. The Autograph 1000 resolution is 72 dots per inch horizontally and 70 dpi vetically so a "doubling" technique is used to maintain the correct aspect ratio and keep the printed images in proper proportion. A full screen display is copied to the printer on continuous fan fold on sheet fed paper in approximately 45 seconds.

The Autograph 1000 printer and the 150 display terminal are available for delivery in 30 days at a price of $1995 for the printer, $2595 for the display or $4500 when purchased together.

For more information, please contact: MQI Computer Products, 2615 Miller Ave., Mountain View, CA 94041, 415-948-8961.

InfoSoft Hits Hard with I/TERM

InfoSoft Systems Inc has announced a new version of I/TERM that provides for off-line data entry, editing and pre-processing for remote computer service or time-sharing users.

I/TERM, introduced in 1976, can communicate between your computer and any time sharing system. It receives or transmits from your disk without special timing or operator commands. I/TERM receives data with no pauses, no loss of data, and no special operator conditions.

I/TERM provides control through the keyboard of your computer to the time-sharing service without special actions or communications protocol. Data can be received and at the same time saved on the disk and routed to a local printer. Files may be transmitted directly from disk to the remote computer.

I/TERM receives and transmits either directly or on remote commands using standard teletype ASR-33 conventions (supported by all time-sharing systems). Control codes may be set for program break or on-line exit to agree with those used by any time-sharing system.

For further information about I/TERM, please contact your local dealer or InfoSoft at: Infosoft Systems Inc., 25 Sylvan Rd. So., Westport, CT 06880, 203-226-8937.

A job should, first of all — at least from time to time, provide a contribution to those around us; secondly be enjoyable; and, incidently, be financially rewarding. It can be so, if one wishes to give as well as receive; produce as well as consume. — *JW*

In order to be perfectly content, it is necessary to have a poor memory and no imagination. — *Bob Cowardin*

Complete System on one S-100 Board

A complete S-100 computer system on a single S-100 board has been introduced by Advanced Micro Digital Corporation.

Called the SUPER/NET, the board consists of 64K of bank-select dynamic RAM; a Z-80A CPU; a 2716 (2K) monitor EPROM; a 5¼ inch and 8 inch floppy disk controller; two serial and two parallel interface ports; and a Z-80A CTC for real-time interrupts. Full DMA operation is supported. SUPER/NET meets full IEEE-696 specifications and operates under both CP/M and MP/M software.

For more information, please contact: Hussein Asadi, Advanced Micro Digital Corporation, 7201 Garden Grove Blvd., Suite E, Garden Grove, CA 92641, 714-891-4004.

Writers Capitalize on New Program

Instant Software Inc. of Peterborough, New Hampshire, has announced their first program in the Computer Aided Instruction English Language Series, Capitalization. This program, teaching the rules governing capital letters, is for the Apple II or II Plus with Applesoft Basic, 32K, and one disk drive.

Capitalization is designed for students, writers, reporters - anyone who wants to learn or review the relevant laws quickly and effectively. Each of the 12 fundamental rules is concisely explained on the screen, then examples are given, followed by exercises. The computer keeps score and reports the level of mastery at the end of each set of exercises.

For more information, please contact: Instant Software, Inc., Peterborough, NH 603-924-7296.

Finally! DataCast — A Reference Publication
for Microcomputer Users!

DataCast is a Reference Series for Microcomputer Users

DataCast is the reference publication for *users* of major microcomputer software systems – particularly CP/M users, and for those interested in mass digital telecommunications.

It presents comprehensive software documentation, written in a clear and simple style.

It offers in-depth surveys and tutorials about the major information utilities now being created to serve large user communities.

Experienced, full-time staff documentation professionals write the majority of the contents of each publication.

All articles are carefully edited to assure the consistent style, accuracy, and quality expected in a good reference book.

The unsolicited praise in the letters responding to the first issue reflect the value and quality of *DataCast*.

DataCast is for Both Novices & Experienced Users

DataCast offers tutorials for new users, reference documentation for experienced users, and – from time to time – internal systems documentation for those who wish to modify a system or understand its internal operation.

DataCast Offers Consistent Coverage of Many Systems

DataCast covers a wide variety of systems and applications software from a number of suppliers. However, all the documentation has the same style, organization and clarity.

DataCast is More of a Book than a Magazine

You can call it a "bookzine" or a "magabook".

Its content is that of a permanent, often-used reference book. Its physical format makes it easy to use as systems documentation.

On the other hand, it is like a magazine in that it is slender, available by subscription, and carries some advertising.

It is an ongoing series, published on a bimonthly basis. This assures that the documentation is timely and reflects the current version of the systems being documented.

Think of it as a magazine, and it's expensive. Think of it as a user's reference book, and it's very inexpensive.

DataCast Subscriptions Save Time and Money

Save 25% over the single-copy price by subscribing to *DataCast*.

You receive each new issue when you subscribe. (Subscribe quickly enough and you can begin with *No. 001*.)

Prompt posting of each issue to your mailbox is assured when you are a subscriber.

Charter Subscribers have Complete Documentation

This is your last chance to be a charter subscriber. Issue *No. 001* is nearly sold out. Subscriptions can start with *No. 001* only while the supply lasts.

Subscribe now and have a complete set. Don't delay!

About the Technical Staff . . .
Jim Warren

Jim has been a consultant, lecturer, writer and editor specializing in small computers since 1968. Back in the first days of microcomputers, he was the first editor of *Dr. Dobb's Journal*, the first publication to provide in-depth software articles and documentation, and a publication that took a strong consumer-advocacy position. He went on to create the microcomputer community's first newspapers (the *Silicon Gulch Gazette*, and later the *Intelligent Machines Journal* – now called *InfoWorld*). He founded and currently chairs the West Coast Computer Faires – the largest microcomputer conventions, held annually. He is the permanent host of "Computer Chronicles", the first weekly television show focusing on microcomputing and oriented to a computer-literate audience. He has chaired Chapters of the ACM, SIGMICRO, and SIGPLAN, and has served on the Program Committees of the National Computer Conference, IEEE Compcom, and the Computer Society's Asilomar Microprocessor Workshop. He holds a Bachelor's, three Master's degrees and has completed all but his dissertation for a Ph.D. in computer engineering at Stanford University.

Tony Bove and Cheryl Rhodes

Tony Bove and Cheryl Rhodes are a writing and editing team. Tony Bove is a co-author of a Wiley Self-Teaching Guide on using the TRS-80 Model III computer, to be released in the Spring of 1982. As a technical writer for Data General Corp., Tony wrote many tutorials and reference guides, including a prize-winning manual on Business BASIC. As a technical writer for Sybex (a Berkeley publisher of computer books), he provided much of the material for *The CP/M Handbook With MP/M*. As a senior technical writer for Intel, Tony Bove wrote a user's guide that is used as a model for all software tutorials, and as project leader for operating systems documentation he designed a library of fifteen manuals to support a new Intel computer system.

Prior to joining DataCast, Cheryl Rhodes worked extensively with ComputerTown USA!, a project of the People's Computer Company (Menlo Park, CA). Her contributions included writing and designing courseware and teaching microcomputer literacy classes for adults and children. She also designed and taught computer literacy classes for the Peninsula School (Menlo Park), and for the Lawrence Hall of Science (Berkeley, CA), where she coordinated the Apple Van Project. Prior to teaching, Cheryl Rhodes spent five years in data processing, computer operations and documentation, including two years at Data General Corp.

Here's what DataCast USERS have to Say
Unsolicited comments from our first readers (and subscribers).

"This first issue should become a collector's gem."
– *Bill Roch, Elliam Associates, Woodland Hills CA*

"Finally, THE PUBLICATION that covers CP/M from a user's standpoint! ... I suspect that your *DataCast* magazine will soon be in the forefront as 'The User's Reference' . . . your magazine fills the specific needs of CP/M users . . ."
– *Kelly Smith, CP/M-Net News, Simi Valley CA*

"I think the magazine will make a name for itself not only through its unique orientation but by being well-focused and practical. Unfortunately good publishing like this is becoming a real rarity these days."
– *Stephen C. Keeble, Lifetime Learning Publications, Belmont CA*

"I found your first issue to be excellent! I'm at a loss to say which article was best. I found they were all very readable, useful, and relevant."
– *Carl Burlin, The Software Group, Anaheim CA*

"The idea of three approaches to CP/M for various levels from beginner to existing users is well executed. ...Nice mixture of user oriented material and a general overview of the status of CP/M ..."
– *Herb Moore, Palo Alto CA*

"The articles on telecommunications for personal computerists were particularly needed these days."
– *Walter Zintz, Uni-Ops, Walnut Creek CA*

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"WordStar" is a trademark of MicroPro International

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25%
BY SUBSCRIBING

Editor's Gossip . . .

reasonable purchase price. They have bigger ones; they also have (or are about to have) very small systems appropriate for homes-with-teenagers. Our info source has been a highly helpful and unusually equitable dude named Jim Gallaway of Gallaway Enterprises, 415-367-1101.

A LAST PASS THROUGH THE PILE-FILE

    If you are in the New Jersey area around the middle of April, you should certainly visit the Trenton Computer Festival . . . not surprisingly being held in Trenton. This is one of the oldest computer hobbyists' swap 'n' gossip meetings, and attended by some of the best. Its April 17-18. Contact Dr. Allen Katz at Trenton State College for details.

    Peerless Radio (516-593-2121) is offering a dandy 32-page reference booklet on switches, relays, breakers, etc. . . . for those who want to get turned on.

    If you're into secret codes and encryption (and decryption), you might take a look at *Cryptologia*, a subscription journal edited by Brian Winkel, Rose-Hulman Institute of Technology, Terre Haute, IN 47803.

    A few Forth junkies might not know that FIG (the Forth Interest Group) held its national conference last November in Santa Clara, California. For FIGnews, call 415-962-8653.

    You did know, didn't you, that *Byte* is now printing 260,000 copies per issue, and *Popular Computing* rose from 60K copies last October to 115K by December?

    UCSD Pascal users can now "belong". They can join the UCSD p-System Users Society. For details, contact Chip Chapin, Box 1148, La Jolla CA 92038.

    Alpha Information, the Alpha Micro dealer in Palo Alto, California, is now producing a very classy-looking A. M. dealers' magazine called *IAMDA Journal.* If yer into Alpha dealin', give 'em a call at 415-494-6221.

    Digital Research — the daddy 'n' mommy of CP/M, MP/M, etc., has recently issued an equally classy first issue of *Digital Research News*, apparently a quarterly. It carries news, views, and product clues concerning DR's products.

    Also, we received a dandy bimonthly tabloid newspaper called *Consulting Opportunities Journal* out of Washington, D.C. (202-296-0436). The 28-pager we got was loaded with information useful to consultant types, ranging from tax hints, to promotion suggestions, to consulting opportunities.

    And, we have a letter dated last summer, sayin' that International Robot Events Limited (415-431-1677) is gonna hold the First International Robot Exhibition in San Francisco's California Academy of Sciences in the summer of 1982, a 3,500 square-foot exhibition that sounds like fun. (comparison: Computer Faire occupies 120,000 sq.ft.)

Computer Networks in the U.K.
Rod Goodman, Univ. of Hull, England
The Microcomputer Industry in France
J.P. Lamoitier, Sybex
Getting the Best Computer Job
Kent D. Kitts, Omicrom

BIOMEDICAL
Microcomputer Applications in Academic Medicine
Thomas N. Abdella, et al, Univ. of Tenn.
The Community Health Information Project (CHIP): Developing a Community-Based Information Utility for the Disabled Using Microcomputers
Joel S. Yudken, Mid-Pen. Conv. Project
Medical Image Analysis with a Microcomputer
Michael L. Richardson, M.D.
Implementation of an Ambulatory Medical Information System on an LSI-11 Based PDP-11/23 Microcomputer
Frederick R. Jelsvsek, et al, Duke Univ.
Design of a Computerized Pulmonary Laboratory
G.B. Rothbart, et al, Science Applications
Public Domain Software in Medicine: The MUMPS Connection
Larry L. Stoneburner, M.D.
Implementing Full ANS MUMPS on a Microprocessor
David J. Marcus, et al, Micronetics
Design & Med Logic Systems
Systems Analysis for Small Computers: A Case Study
Rodert van Spyk, C.S.U. at Hayward
Information Processing by the Computer and the Central Nervous System (A Comparison)
C. Torda, Stanford University
"Blaise": A Portable CMOS Bioterminal Programmable in Pascal
H. Tavernier, et al, Faculte de Medecine Pitie-Salpetriere, Paris

NOVICES
Microcomputing Languages, or How to Talk to Your Computer
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How to Buy Your Own Computer
Jerry Willis, Texas Tech University
Towards Computer Literacy
James S. Milojkovic, Stanford
Computer History for Beginners
Peggy Comer, Sunburst School
Software Developement and Operating Procedures for Personal Computers and Microcomputers
Paul Holliday, Computer Sciences Corp.

LEGAL
Electronic Game Pirates: The Scramble for Viable Protection
Michael D. Scott, Scott Report
Legal Care for Software
Daniel Remer, Attorney
How to Leave and Compete with Your Employer Without Getting Sued
Jaes H. Pooley, Mosher et al
Systems Documentation and System Malfunctions
John P. Walter, C.S.U. Dominguez Hills
The Impact of Computer Theft
Thomas J. Smith, Anchor Pad

EDUCATION
A Review of Preschool Children's Use of the Computer
Kathleen M. Swigger, N. Texas State
Foundations for the Use of Computers in Preschool Classrooms
Jerome R. Schmidt, et al, Education Svc.
Visual Discrimination and Preschoolers
Deborrah Smthy-Willis, et al, Texas Tech.

Electronics Interaction with the Preschool Handicapped Learner
David L. Craig, Texas Tech University
Recommendation for Logo Learning Centers
Vicki Carver
A Suggested Model for Establishing the Validity of Computer Assisted Instructional Materials
Sherwin Steffin, Edu-Ware Services
Computer Applications in Assessment and Evaluation for Preschool Children
Dee LaMont Johnson, Texas Tech.
Benefits of Using Computers in Special Education
Mary M. Humphrey, et al, Teaching Tools
Special Education Management System Using Microcomputers
Leonard T. Meuer, Travis School District
Microteach – Courseware Production Made Easy
Thomas P. Bun, Compumax

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David M. Prittle, Smart Management Sys.
Management Information for Productivity
Thomas P. Hill
Access/80: Report Generation to Data Management in Three Steps
Frederic Gey, Friends Software

Man's mind, stretched to a new idea, never goes back to its original dimension. — *Oliver Holmes*

Try putting your pillow at the foot of your bed and sleeping turned around one night. If you find you sleep uncomfortably, then beware — for your ability to innovate and move into the future is in danger.

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