

# SILICON GULCH GAZETTE

190

Volume 5, Number 1 Computer Faire, 333 Swett Road, Woodside CA 94062 (415) 851-7075

## Real Grabbers at the Faire

Microbot will unveil its MiniMover 5 at the Computer Faire. This tabletop robot arm is a unique instrument that attaches as a manipulative device to an inexpensive personal computer. It enables individuals or groups — such as schools and technical-interest clubs — to acquire hands-on experience with computer-controlled automation, artificial intelligence, and robotics.

The MiniMover 5 may be used for such applications as: (1) computer games, in which the arm moves game pieces on command; (2) computerized construction, in which building components may be arranged into a wide variety of configurations or programmed mathematical designs; (3) computer assembly, simulating automated factories of the future; (4) computer art, utilizing such direct graphic instruments as paint brushes, felt tip pens, etc.

A complete hardware and software package has been developed to run the MiniMover 5/80 version with the Radio Shack TRS-80 Computer (Level II). The hardware consists of the arm, its power unit, and a ribbon cable connection to the TRS-80 keyboard. For interfacing with other computers, the MiniMover 5/8P version is controlled by a single 8-bit parallel port.

The ARMBASIC software package allows control of the MiniMover and its hand by simple BASIC-like commands. The assembly language motor drivers and the Cartesian coordinate transformations are included. Sample applications programs for calibration and block construction are available.

### The Source of Hot News

Most of the news articles in this issue that are not related to the West Coast Computer Faire have been reprinted with the kind permission of *InfoWorld* (formerly *Intelligent Machines Journal*).

*IW* is the only fast-turnaround, biweekly newspaper explicitly serving the microcomputer community and those interested in inexpensive computing capabilities. It is a valuable resource to those wishing to keep up with — rather than keeping behind in — what's happening in micros.

(Remember that all of the glossy monthly magazines are feature-oriented rather than news oriented, and have a 2-8 month or more delay in publication of articles... that's most of a generation of a microcomputer. Use the mags for in-depth coverage; use *IW* for the latest news.)

Subscriptions are only \$18/26 issues (one year) in the U.S. (Out-of-country rates available on request). *Infoworld*, 530 Lytton Avenue, Palo Alto, CA 94301, (415)328-4602.



Microbot's MiniMover 5, shown above interfaced to Radio Shack's TRS-80, will demonstrate at the Computer Faire that it is armed to grasp the situation at hand.

The MiniMover 5 is a five-jointed arm with a lifting capacity of 8 oz. when fully extended. Controlled by stepping motors, it has a resolution of 0.013 inch. The parallel-jaw hand grasps objects up to 3 inches wide and may be positioned inside a partial sphere with a radius of 17.5 inches. Top speed is from 2 to 12 inches per second depending on the weight of the object being handled.

Further information on the MiniMover 5, and a special Faire offer, contact: Microbot, 1259 El Camino Real, Suite 200, Menlo Park CA 94025; (415)326-6997.

## RUMORS MONGERED HERE

by Jim C. Warren, Jr.

The southern end of the San Francisco Peninsula is known as Silicon Valley (or 'Silicon Gulch' to elektronikers with left-handed tongues), although unworlly geographers continue to naively call it the Santa Clara Valley.

Though hot and dry most of the year, it leaks like a Nixonian White House. That is, rather than leaking water — which is scarce — it leaks rumors and technical tidbits... in a manner that strikes terror in the hearts of patent attorneys, and brings joy to the hearts of industrial spies and computer junkies.

The fact that the Truth Value of these rumors turns a Boolean universe into a continuum with only one extremity being 'True' in no way detracts from their entertainment value. Thus, we herewith dribble out to you, gentle readers, the more interesting of the rumors... offered as comic relief for our fellow technonuts, perhaps occasionally tainted by truth.

(And, we must admit to some degree of desk-thumping frustration — for we do honor the requests of our sources who feed us most tasty morsels, but ask that the information remain 'off the record'. For, after all, were we to fail to maintain confidentiality when requested, then our rumor wells would shrink to a trickle and then we wouldn't know what's going on.)

## UNIX for Mere Humans

We recently heard that Bell Labs has finally made a move to allow unwealthy, un-university humans to gain the volumous benefits of UNIX — at least through a wealthy middleperson. The word is that Western Electric, the sales arm of Bell Labs (or is Bell Labs the creative arm of WE?) is now allowing companies to purchase the right to

continued on page 6

## 5TH WEST COAST COMPUTER FAIRE Conference & Exposition

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March 15 (Saturday): 9 a.m. - 6 p.m.

March 16 (Sunday): noon - 5 p.m.

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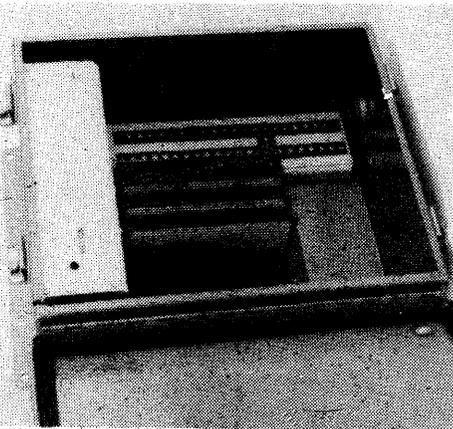


## Breezy Approach for Gathering Wind Data

The Helion Micro-Logger Model 100, a microprocessor-controlled, field data acquisition system, has been installed at sites throughout the desert area in California. This large array of intelligent data systems is being used to collect and process wind energy information in support of solar-based, energy programs sponsored by the California Energy Commission.

Edwin Berry, the principal meteorologist conducting the wind survey said: "This is one of the largest field evaluation studies being conducted in support of wind energy. Data is being collected and pre-processed in real time over an area covering 35,000 square miles." Edwin is president of Atmospheric Research and Technology, Inc., the Sacramento-based consulting firm conducting the wind study for the Commission.

Wind speed and direction are monitored and processed directly to produce high resolution data sets which are



Helion Micro-Logger Model 100

stored hourly in computer memory. These data sets are then collected and sent to California State University at Chico for final computer processing and data presentation. All existing wind data for the area has been retrieved from other data archives and is being reformatted to correlate with new data as it is collected. Thus, with the use of the Micro-Logger, highly accurate prediction of wind energy is possible.

The Model 100 Micro-Logger is a low-cost computer designed for field resource studies. It can be configured to monitor and process both digital and analog signals from sensors used to measure temperatures, pressures, wind speed, solar insolation, rain fall, soil moisture, and other environmental data. Programming may be selected to either partially process incoming information, as in the case of the California desert wind study, or fully process incoming data and present the results directly on a printer or store those results on magnetic tape. "We selected the Helion Micro-Logger for its cost and performance advantages over other equipment available", Edwin said.

Helion is the Brownsville, CA, based firm that supplied the Micro-Loggers. The firm is engaged in solar energy consulting, and production of energy conservation computers. Information on Micro-Logger systems may be obtained from Helion, Inc., Box 445, Brownsville CA 95919.

### The First Bug

Captain Grace Murray Hopper reports that, while looking through the operations log of the Mark I computer, she found the first computer bug. It was a moth, taped in the log. It had been caught in one of the electromechanical relays of the Mark I, causing it to malfunction.

# Out of the PAN & Into the Hotline

People's Computer Company, of Menlo Park, California, and The Personal Computer NETWORK (PCNET), a San Francisco Bay area group, have announced the availability of low-cost computer mail support software for personal computers. The software is currently available for the Commodore PET; versions for the other major personal computers will be announced in the next few months.

The new computer mail system is called "PAN." In Greek mythology, Pan was the illegitimate son of the gods' messenger, Hermes; PAN, the personal computer mail system, was inspired by a sophisticated mail system called "HERMES," developed by Bolt, Beranek, and Newman, Inc., for the DEC Systems 10 and 20 computers.

PAN is a cooperative development of PCNET and TNW Corporation. PCNET has been working on the development of personal-computer-based telecommunications since 1977, and has recently joined People's Computer Company, a non-profit educational corporation, to form the PCNET Project.

#### Communications and Cost Advantages

The PAN system offers communications advantages over both traditional mail and the telephone, and cost advantages over existing, expensive, electronic mail systems. The advantages of PAN over traditional mail services include:

- Choice of time of delivery: either immediately, or 'tagged' for transmission at a specific time
- A signal from the receiving computer, allowing the sending computer to mark the message "sent."

PAN offers the following advantages over telephone communication:

- Messages can be sent during low telephone rate periods.
- All received and transmitted messages can be recorded for future reference.
- The user need not be present to transmit or receive information.
- The system has a 'keep trying' feature which causes it to wait until the line is clear before delivering the message.

Cost advantages over existing electronic mail systems include:

- Low entry cost
- PAN uses the dial-up telephone network
- Telephone charges can be low if messages are tagged for transmission during off-hours
- PAN software costs \$12, including the manual
- PAN is designed to run on a personal computer, the average cost of which is \$1500.

The present PAN system is best for letter (i.e., English language) communications. PAN is designed so that all existing computer terminals now in use in major universities and corporations can access PAN systems to read and write messages. Terminal-to-PAN communication,

however, is primitive, due to the limited capacities of existing terminals.

#### Continued Developments Planned

The PCNET Project plans continued developments following this initial version of PAM, including:

- *Improvements in the error management capabilities of PAN.* At present, the error rate of PAN messages is about one error for every five minutes of message transmission. This error rate is not adequate for computer programs or financial data. An error rate of one error for every two weeks of message transmission appears to be obtainable
- *A file transfer capability.* This would allow a complete program to be sent from one personal computer to another over the telephone. Because of the potential low error rate, the receiver of the program can be confident that the program will run successfully. This file transfer capability would allow 'bootstrap' loading of the PCNET program itself over the telephone. To do this, a very short program is loaded by hand into the computer. This short program then manages the transfer of the much longer PCNET program from a remote computer via the telephone line. By this process, the PCNET programs can 'migrate' from computer to computer.
- *Other computer links.* The PCNET Project hopes to experiment with media other than the telephone system as the communication link between PCNET computers. One possibility is radio, which has the potential of markedly increasing the amount of data that can be transferred, while decreasing the cost.

A PAN program on cassette tape for use with an 8K or larger Commodore PET can be ordered from People's Computer Company for \$12. The package includes a perpetual license for the software, and a user's manual; the manual alone costs \$2. PAN requires a compatible modem, a telephone line, and a personal computer.

Updates to PAN software, error reports, and general user information will appear in *Dr. Dobb's Journal of Computer Calisthenics and Orthodontia*, a reference journal for users of small computers published by People's Computer Company.

Contact People's Computer Company, P. O. Box E, Menlo Park, CA 94025; (415) 323-3111.

#### Conference Session

## The Personal Computer Makes Overtures to the Performing Musician

The number of people able to do computer music has expanded greatly with the introduction of personal computers, freeing the field from its previous limitation to a few, large, expensive studios. Techniques and commercial products have developed for shaping the four, basic parameters of a musical sound: pitch (what frequency is the note?), timbre (harmonic content; like a flute?, or something harsher?), duration (percussive, like a drum?, or continuous like an organ?), envelope (initial attack, sustain while held, decay at end).

The techniques range between two limits: from making sounds in software only, to doing it all in hardware.

In a talk at the Computer Faire, Richard Higgins of the University of Oregon Physics Department, will survey recent developments in electronic music (polyphony, microcomputer control, dynamic keyboards, and digital sound generation), and new techniques in digital music development systems (additive synthesis, FM or phase modulation timbre, and digital filter music). A number of recent advances are described which are familiar to synthesizer music performers but are unfamiliar to personal computer users.

A personal computer is a resource for music experiments, provided that several gaps are overcome. Solutions to two of these (dynamic keyboard, and software real-time, musical, voice-synthesis on an 8-bit microcomputer) are briefly described.

#### Conference Session

## Giving Yourself The Business

Many people are looking at the microcomputer, and playing with the idea of quitting their secular jobs and going into business for themselves with their micro. Tony Severa dropped out of the 9-5 job market to go into business for himself in 1978. He opened Tony's Data Service in Vacaville, California, in March of that year. He has since started a new software company for the Apple computer for beginning owners, called Apple Orchard.

"Thoughts While Waiting for the Cavalry to Rescue Me," is the title of Tony's talk to be given at the Computer Faire, describing life in the wilderness, and survival tips.

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## Busing for Transit

Mass-transit-system planners in Portland, Oregon are using a \$2,500 Radio Shack TRS-80 to help design a major rail system for the Portland area. The applications were described by Dennis Porter in a paper read at a conference of the Urban and Regional Information Systems Association, held August 19-23, in San Diego.

The Tri-County Metropolitan Transit District of Oregon (Tri-Met) has access to an IBM 370/155, and has used that machine to develop large systems for vehicle scheduling and information retrieval. But the planners decided that a small computer could have its uses, too.

Porter described three applications being developed on the TRS-80 which will support planning for a light rail transit (LRT) line Tri-Met plans to run from downtown Portland to a suburb. Porter characterized LRT as "the modern evolution of the streetcar."

Since the LRT will traverse downtown Portland at street level, the planners must give careful consideration to the line's effect on the traffic flow. The first TRS-80 application supports this function.

Tri-Met planners run a simulation of an LRT vehicle's progress along the downtown part of the track. The program, written by Tri-Met staff in Radio Shack Basic, considers the effects of stoplights, passengers getting on and off, and actual placement of boarding stops. It displays its output through a schematic picture of the vehicle moving in real time. The simulation is being used to study the effects of various design parameters, such as stoplight timing, on the LRT system.

A second program analyzes the consequences of various routes proposed for the LRT line, and considers such factors as cost, number of traffic lanes displaced, closeness to places of employment, and travel time. After the properties of the various routes have been quantified, the program weights them with 'importance factors' assigned for that run, and comes up with a single score indicating the suitability of each proposal.

The third program analyzes the performance of various kinds of LRT vehicles that might be purchased for the system. Using elementary equations of motion, the program calculates the travel time between any two stations on the line.

Not all of the results are given full credence. In particular, Porter called the program which calculates the merits of various LRT routes a "debatable venture . . . reducing a complex alternative with many descriptive aspects to a single number."

But one of the primary goals of the system is to gain experience with a microcomputer, and evaluate its potential usefulness in transit planning; Tri-Met is pleased enough with the results to plan further enhancements to its programs. Porter also mentioned several new applications Tri-Met was considering, including one that would involve linking the TRS-80 to the mainframe computer as an interactive data entry and editing device.

## Figure Solar Energy In a Calculated Manner

SUNSIM-1 (trademark) program calculates energy from the sun, and shows how it can be used in the home. Anyone interested in the amount and use of the solar energy available in his or her home will find this program useful. The program calculates the sun's energy in hourly intervals at any specified location on earth, and demonstrates its use for domestic space heating, cooling, and hot water heating.

The home energy distribution system is dynamically shown with graphics. Cumulative energy and temperature values are displayed, including solar energy collected and used, backup energy used, thermal and hot water storage temperatures, and more. Default values are built into the program, and users can also input their own requirements for size of home, volume of thermal storage, and area and angle of solar collector.

Written in TRS-80 Level II Basic, SUNSIM-1 requires 16K bytes of storage. Contact: Solartek, Box 298, Guilderland NY 12084.

Dave Gries refers to those old-fashioned diagrams of programs as "Flaw Charts."

## Special Retailers' Showing At Computer Faire

The Computer Faire exposition will be open for a special showing for retailers and exhibitor guests on Sunday morning, March 16, from 10 a.m. to noon. Computer and electronics distributors and retailers may obtain a "Retailer" ribbon to attach to their admission badge - allowing access to this special showing - by requesting it on letterhead stationery from the Computer Faire office.

Immediately following the Sunday morning retailer show, there will be an open meeting for computer retailers, chaired by Bob Moody (Alpha Information Systems, Palo Alto), president of Western Computer Dealers Association, in one of the conference halls of the Civic Auditorium.

— FREE —

If you would like to receive future issues of the GAZETTE, without cost, and you have not received one addressed to you with "from the Computer Faire" on the label, then please send us your name and mailing address.

Conference Session

## Operator or Operatee?

"Using a computer should always be easier than NOT using a computer," says Tony Bove of Sybex, Inc. In his talk at the Computer Faire, he will describe methods of teaching an operating system to "naive users," and outline typical operations in a system using CP/M (and the latest MP/M) as models.

Tony says, "If you walked into a stereo showroom with your own cassette, you could easily manipulate any of the controls on the latest and most expensive cassette recorders. You should also be able to walk into a computer store and operate an operating system. You should know what to look for in a system, and know what kind of application programs would fit well with a particular operating system.

"During my talk, I will simply demonstrate teaching an operating system to ordinary people. If you are a total beginner to computers, you should be able to understand and even TEACH the fundamental operations of a system like CP/M."

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## Take Credit For Attending Computer Faire With Class (UC)

Two short courses — "Practical Introduction to Personal Computing," and "Computers for Education" — will be given in San Francisco by University of California's Berkeley Extension in connection with the Computer Faire.

Both courses are planned to help participants get the most out of the Faire, offering guidance on what presentations should be most valuable, and what equipment to examine. Sessions scheduled before, during and after the Faire provide an opportunity for preview and subsequent evaluation of presentations and exhibits.

"Practical Introduction to Personal Computing" is intended for people who have little knowledge of computers and will offer a general introduction to the subject with discussion of current and future applications. Emphasis will be on personal computers.

This four-session course will meet from 7 p.m. to 10 p.m., Tuesday and Thursday, March 11 and 13, at the UC Extension Center, 55 Laguna St (off Market St), and from 8 a.m. to 10 a.m., Saturday, and 5 p.m. to 7 p.m., Sunday, March 15 and 16, at the Computer Faire in the Civic Auditorium, 99 Grove St.

Topics and speakers are:

\* March 11: "What is a computer? What computers can and cannot do," Gerald Baugus, president of Alpha Info Systems, Palo Alto. "Computers and the future for the average consumer," Jim Warren, director of the Digicast Project, Palo Alto, and chairperson of the Computer Faire.

\* March 13: "Current uses of computers and how they do what they do, including an introduction to programming with a demonstration on a personal computer," Gerald Baugus.

\* March 15: "What to look for in computer products," John Craig, publisher of *InfoWorld*, and past editor of *Creative Computing*, and *Kilobaud*.

\* March 16: Panel discussion of Faire exhibits with opportunities for questions and answers about specific applications of interest to course participants, Joan Lasselle (course coordinator), technical writer at Hewlett-Packard in Cupertino, accompanied by Gerald Baugus and John Craig.

The second course, "Computers for Education," will explore classroom and other educational applications of low-cost personal computers. Academic credit (optional) may be earned.

The course will meet from 7 p.m. to 10 p.m., Thursday, March 13, at the UC Extension Center, 55 Laguna St (off Market St), and from 6 p.m. to 9 p.m., Friday, and 5 p.m. to 7 p.m., Sunday, March 14 and 16, at the Faire in the Civic Auditorium, 99 Grove St.

Topics include classroom computing activities, specific applications for elementary and secondary schools, comparisons of available computing hardware and software, computer-kit building at home or at school, and sources of materials that can be used with a computer.

Course instructor will be LeRoy Finkel, teacher of computer science at San Carlos High School and DeAnza College. Guest speakers will include Joanne Coltnow, computer consultant in Palo Alto.

Registration fee for each course is \$75, which includes admission to the Computer Faire. For further details and enrollment forms, call 642-1061 in Berkeley, or write to Letters and Science, UC Extension, 2223 Fulton St, Berkeley CA 94720.

## A Cast On Our House, AND on the Votes

According to a report by United Press International, the House Ethics Committee has begun an investigation into the recording of six votes for Illinois Representative Morgan Murphy. It seems the votes, which were tallied on the House's computerized voting machine, were recorded on July 30 — when Murphy was in Chicago.

Congressmen register their votes on the system by inserting plastic cards into slots at voting terminals which are placed at 44 locations on the House floor. The computer then records the vote and the terminal used, and identifies the member's card and the exact time the vote was cast.

Representative Murphy does not recall whether he had his voting card with him when he went out of town, but a spokesman for the General Accounting Office said that it would be easy for someone familiar with the system to forge a card. The Committee's investigation is not aimed at Murphy, but at the fact that six votes were recorded in his absence.

In a related matter, President Jimmy Carter has revealed that he keeps a printout in his desk drawer with records of each Congressman's vote on each issue. He said he would refer to it to deal out political punishment if Congress failed to pass certain legislation he wanted.

Now if the people could only get access to that same data base. . .

Please, mention where you saw it, when you respond to an ad in the *Silicon Gulch Gazette*.

## Police Software: Arresting Developments

The Law Enforcement Assistance Administration (LEAA) is sponsoring development of a police records system that will run on microcomputers and small minicomputers. Called the "Police Operations Support System," or 'Posse,' the system shows the lengths to which computer people will go to make an acronym.

Posse is designed to give small and medium-sized police departments, serving populations of 100,000 or less, the ability to automate their record-keeping systems at a reasonable cost. LEAA plans to develop a software package that is general enough to be modified to fit various agencies' needs and hardware.

Individual police departments will have to pay for their own equipment, but LEAA will provide the applications software and documentation at no cost. In the future, LEAA plans to provide technical assistance to law enforcement agencies that wish to install Posse. Over 150 police forces have already expressed an interest in it, and 40 have said that they would definitely participate in the project.

Posse is being developed and tested by the Applied Microsystems Division of Simcon Corporation, of Arlington, Virginia. A number of standalone software modules are being developed so that systems can be tailored to fit specific needs. The modules will include a master name index; records of offenses, arrest and incarceration, identification, and microfilm; crime reporting; and calls for service analysis.

Other modules will include youth contact, suspect/witness files, and records covering property, personnel, training, and manpower allocation. The software will be written in Cobol and Basic to facilitate the transfer of programs between agencies.

Initial installation and testing will take place at the beginning of 1980 in Simi Valley, California; Grand Prairie, Texas; and Laurel, Maryland. LEAA will provide documentation including hardware procurement specifications and operational procedures manuals.

## You Can Probably Ketchum (ID) at Home

Futurists often predict that tomorrow's office workers will have communication resources sufficient to let them work at home, seldom or never visiting the office. Computer conferencing systems may be the thing that brings that state of affairs about.

During trials of the Institute for the Future's Forum system, Gerald Askevold, of the United States Geological Survey, used it to supervise work on an Alaskan mineral resources data base, and to advise USGS staff on administrative problems. He did both from his home.

How often did Mr. Askevold go to the office? Probably, not often. The offices he worked for were in Menlo Park, California, and Reston, Virginia. Mr. Askevold lives in Ketchum, Idaho.

# 5th West Coast COMPUTER FAIRE

**March 14, 15, 16, 1980**  
*Friday Saturday Sunday*  
9am-6pm 9am-6pm Noon-5pm

**San Francisco's Civic Auditorium & Brooks Hall**  
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*Lots of Parking — It's a Weekend*

**Registration includes  
Conference Program & Exhibits for all 3 days**  
Pre-registration available at participating stores & clubs  
*At-the-door registration: \$10*

# Electronic Mail Will Leave Its Stamp on the 1980s

By the end of the 1980s, users will be spending more than \$4 billion per year on electronic mail services and equipment. Although the field will probably be dominated by firms such as AT&T, IBM, and GTE, at least fifty other suppliers are expected to be active in more than a dozen specialty niches, according to a recent report from International Resource Development, Inc., a management consulting firm. The report, entitled *Electronic Mail in the 1980's*, predicts that the U. S. Postal Service will participate in the future electronic mail market through new and ambitious service offerings; however, the IRD consultants believe that the USPS will end up with only about one quarter of the market.

## NEW, "INTELLIGENT" TYPEWRITERS, TELEPHONES, & COPIERS

Discussed in the report is the expected emergence of several new types of devices for sending and receiving electronic mail, including high-speed printers to be used in conjunction with the Satellite Business Systems wideband satellite communications service. But the most important elements in future electronic mail networks will be "intelligent" communicating versions of the familiar office copier, telephone and typewriter, says IRD, which points to the availability already of intelligent copiers from IBM, Wang and Sharp, and of electronic communicating typewriters from Exxon's Qyx division. Enhanced-function telephones, with scanners and perhaps small, calculator-type printers, will soon appear on the U. S. market, suggests IRD.

The emergence of these new communicating devices will spur the use of electronic mail, but to some extent this will be at the expense of the market for facsimile transceivers or telecopiers. Communicating word processors, for example, are easier to use and many times faster than even the fastest business facsimile unit, points out the report. According to Linda J. Shine, of the IRD research staff, "Eventually, the facsimile transceiver will suffer the same fate as the collator — facsimile capability will become merely a feature or function of an office copier. Of course, the facsimile transceiver will not disappear completely, just as the collator has not disappeared, but the typical graphic transmission will take place from an intelligent telephone to an intelligent copier. The typical alphanumeric transmission will take place between communicating typewriters or word processors, and there will be multi-function networks (including AT&T's ACS) which will handle store-and-forward switching of both scanned and ASCII message data."

Although the IRD consultants expect some growth in the use of terminal-based electronic mail (TBEM), such as the COMET service offered by Computer Corporation of America, the new multi-function office systems such as the IBM 5520, Xerox 860 and Datapoint IEO are

expected to capture much of the future desk-to-desk electronic message traffic. As a result, vendors of TBEM services and software, particularly those timesharing companies who have recently moved into the TBEM field, will probably be disappointed by the acceptance of their message services. The report points to the Datapoint Integrated Electronic Office as the outstanding current example of the new generation of multi-function office communications systems, and projects very strong growth for this segment of the market.

## AGE OF THE INTEGRATED NETWORK

Analyzing the new network service offerings from suppliers such as Satellite Business Systems (SBS), Xerox (XTEN), and Hughes, IRD predicts that by the mid-1980's, most of the networks will include message-switching nodes which will have the capability of handling intermixed facsimile-type and CWP-type traffic, together with digitized voice traffic. "Although store-and-forward voice switching services will grow rapidly in popularity over the next five years, the underlying trend in traffic will be away from voice and towards more structured types of message communications," predicts Linda.

The IRD consultants expect AT&T to participate strongly in both the store-and-forward voice market (using its #1 VSS offering), and also in the message market (using the Advanced Communications Service offering). "AT&T will almost certainly receive permission to implement ACS," believes Linda, "and the current delay in implementation can be attributed as much to a desire by AT&T to pick the right political moment for receiving authorization as to the software problems which AT&T has claimed delayed ACS."

If all current types of electronic message services, including Telex/TWX and Mailgram, are considered, the current spending by users on electronic mail is about \$1 billion, says the report, which projects a 1989 market in excess of \$4 billion.

International Resource Development, Inc. is a specialized research and management consulting firm, which has produced more than fifty major market studies over the past eight years. Research for these studies, and for corporate-client projects, includes an on-going program of interviews and questionnaires with users and suppliers of computer/communications services and equipment. In addition to producing multi-client studies, IRD has performed major consulting assignments for organizations such as AT&T, General Electric, Centronics, Rockwell International, and GT&E. Further details on the *Electronic Mail in the 1980's* report, including a free Table of Contents, and description, are available from IRD at 30 High St, Norwalk CT 06851; 203-866-6914.

## Faires Scheduled thru '84

West Coast Computer Faires have been scheduled through 1984 (we don't know what's going happen, post-Orwell). All are planned for San Francisco's Civic Auditorium and Brooks Hall — the largest convention facility\* in northern California. They will be:

- 1981 April 3-5
- 1982 March 5-7
- 1983 March 2-3
- 1984 March 21-22

Note: We are attempting to move to later dates in '82 onward, however San Francisco's convention calendar is absolutely packed, and — to our amazement — we were doing well to get any options on the dates indicated.

\* — We did consider using other facilities, e.g. the Cow Palace or County Fairgrounds (great for cows, but with little or no conference facilities, and we strongly feel that the information exchange in the conference program is a major benefit of the Faires), San Jose Convention Center (delightful place, but too small), and the new Yerba Buena Center (so new it's never been built).

## Spare Loot for You (or for Your Organization)

If your computer club, professional association, school or company department — or your entrepreneurial self — wishes to handle Computer Faire preregistration, the Faire is willing to offer you a discount. Any person or organization that wishes to do so may purchase Faire prereg forms and door-pass badges in groups of 20 for \$7 each with a 50% return privilege. (At-the-door registration will be \$10.)

This means that you and your associates (10 or more; you can return the other 10 for a full refund) can (a.) attend for Faire for 30% lower cost than on-site registration, (b.) build your organization treasury by offering Faire reg at more than \$7 but less than the \$10 on-site fee, or (c.) become wealthy while offering purchasers the opportunity to avoid standing in the on-site registration lines at the Faire.

Orders for prereg packets — in multiples of 20 — may be placed by mail or phone. The packets will be shipped to you within two days of the order, via UPS. If payment accompanies the order, the Faire will pay the UPS charges. If you prefer, you may order C. O. D. and pay the nominal UPS shipping and COD charges. \$140/packet of 20.

Up to a 50% refund (i.e. up to \$70 for 10 unused preregs) will be available upon request, following the Faire. To claim this refund, the unused packets in their original condition must be returned to the Faire offices by April 17th (a month after the Faire). All refunds will be mailed on or before April 30th.

## The Lost Corral

Meeting someone during the Computer Faire? Arrange to rendezvous with them in the left, right, or center seating area of the balcony overlooking the main exhibit arena. It is a comfortable and uncrowded place in which to relax and wait 'n' watch.

# THE MM-103 DATA MODEM AND COMMUNICATIONS ADAPTER

S-100 bus compatible

## FCC APPROVED

Both the modem and telephone system interface are FCC approved, accomplishing all the required protective functions with a miniaturized, proprietary protective coupler.

## WARRANTY

One year limited warranty. Ten-day unconditional return privilege. Minimal cost, 24-hour exchange policy for units not in warranty.

## HIGH QUALITY

-50 dBm sensitivity. Auto answer. Auto originate. Auto dialer with computer-controlled dial rate. 61 to 300 baud (anywhere over the long-distance telephone network), rate selection under computer control. Flexible, software-controlled, maskable interrupt system.

## ASSEMBLED & TESTED

Not a kit! (FCC registration prohibits kits)

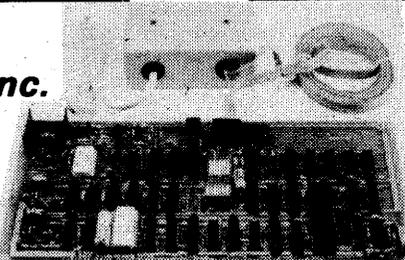
**LOW PRICE — \$359.95 — For Modem AND Coupler**

plus shipping & handling



**Potomac Micro-Magic, Inc.**

Write for brochure:  
First Lincolnia Bldg., Suite B1  
4810 Beauregard St.  
Alexandria, Va. 22312



Call for further information:  
VOICE: (703) 750-3727  
MODEM: (703) 750-0930 (300 baud)



## Wholly-Based Bible Study

Computer Assisted Bible study is a new, nonprofit corporation. Its purpose, as stated in the *CABS Newsletter*, is "to encourage Bible study by developing procedures, data bases, and software so that a personal computer in the home could be used to speed up the process of physically locating related verses and reference information."

Presently, the corporation is working on developing a data base which will include the King James and Revised Standard versions of the Bible. Among the applications the group is working on are a 'books of the Bible' drill; a Bible subject index for aid in writing tracts; a music synthesizer for use as a church organ; and programs to aid translation of the Bible into other languages.

A number of the group's members are working on different projects including a method of displaying the Greek, Hebrew, and German alphabets; establishing a standards committee to facilitate the exchange of programs and data within CABS; and use of the data base for Bible games such as "Who am I?" and "What am I?" According to the group's newsletter, "The Bible is the food. The computer is the fork. It can, and Lord willing, will, help us get His word to our face. It is up to us to eat."

Contact Computer Assisted Bible Study, Inc., 19 Huntington Lane, Willingboro, NJ 08046; (609) 877-8847.

### Conference Session

## UCSD PASCAL Software Club

"The UCSD Pascal language system is one of the most sophisticated microcomputer software systems available today," says Dr James Gagne, Datamed Research president. "Because of the ease with which one can write and maintain high quality programs of most types, from systems software to business applications to games, it is becoming increasingly popular. Already a number of other Pascal implementations have appeared for microprocessors, though none so complete. The UCSD system promises to be the vanguard of an enormous interest in Pascal in the coming decade."

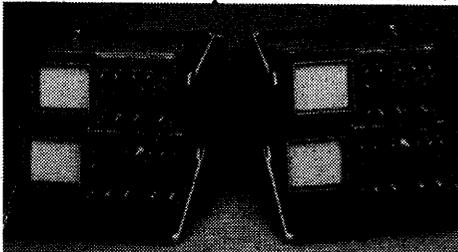
In his Computer Faire talk, "A New, Minimal-Cost Software Club for Users of UCSD Pascal," James will announce a new service by Datamed Research for users of Pascal, particularly UCSD Pascal (trademark, the Regents of the University of California). They are forming a users group, very similar to the popular CP/M Users Group, and will distribute donated Pascal software on 8-inch, floppy disks in both UCSD and CP/M disk formats, at a very low cost.

James' talk briefly reviews the features of UCSD Pascal, discusses the existing Pascal Users Group and why this Datamed Research service is required, and describes the philosophy and logistics of this new software, sharing group.

## The Scope of Current Measurement

Philips Test & Measuring Instruments recently announced the introduction of two, new, general purpose, 35 MHz oscilloscopes with digital and computer applications. The new portable oscilloscopes, the PM 3216 and the PM 3218, have a maximum sweep speed of 10 ns/div., and a trigger hold-off facility that eliminates double triggering on digital signals, making it unnecessary to use the timebase in the uncalibrated mode.

The announcement stated, "We believe that both the PM 3216 and the PM 3218 will carve out significant niches in the test and measuring market in that they are fulfilling a need for moderate-cost scopes which extend the



range of the widely accepted Philips 25 MHz instruments, and are suitable for an increasing range of digital and computer applications."

It further noted that the PM 3216 is a dual trace, single timebase model, while the PM 3218 is a dual trace, dual timebase oscilloscope also featuring an alternate timebase display, and added that with their introduction, Philips Test & Measuring Instruments now offers an extensive range of economically-priced, portable oscilloscopes in the 25-35 MHz range, as well as in the higher bandwidths.

The new oscilloscopes have a 2 mV sensitivity over the entire 35 MHz bandwidth, coupled with a trigger sensitivity of 1 div, and an external trigger sensitivity of 200 mV. In addition, a 10:1 attenuator on the external trigger provides a very wide dynamic range.

Both the PM 3216 and the PM 3218 can be operated from a wide range of power sources including 110, 127, 220 and 240V AC (+/- 10%) in the frequency range of 46-440 Hz, as well as 21-27V DC. An optional 24V battery power supply permits portable operation for field and other applications, with the power consumption only 30W.

Double insulation between the instrument and line allows both instruments to be operated without a ground connection, and eliminates the possibility of ground loop and hum problems.

The PM 3216 and PM 3218 are ergonomically designed for simple, convenient operation, and feature a large 8x10 cm screen. The instrument weighs only 8.4 kg (or approximately 18.5 lbs.).

Contact: Philips Test & Measuring Instruments, Inc., 85 McKee Drive, Mahwah NJ 07430; (201) 529-3800, a North American Philips manufacturing and marketing organization for N. V. Philips' Gloeilampenfabrieken.

North American Philips (NYSE) is a manufacturing and marketing organization with operations in consumer products and services, electrical/electronic components, professional equipment and chemical/animal health products.

### FREE: Get Future Gazettes

If (1.) you would like to receive free future issues of our glorious *Silicon Gulch Gazette* (worth at least every penny you pay for it); and (2.) the mailing label on this issue does not have the mailing date in square brackets, then send your request to:

Free SGG, Computer Faire  
333 Swett Rd  
Woodside CA 94062

### Conference Session

## Bringing Computers To the Masses

"Inexpensive and easy-to-use microcomputers offer the possibility of expanded use of computers, both into new areas, and by people who have never before considered using them. But the expansion beyond the naturally motivated population does not necessarily follow the introduction of new equipment or the offering of new courses. Certain individuals are naturally attracted to computers and quickly pick up the skills and vocabulary necessary to make progress. But most people, whether because of lack of opportunity, low confidence, or the high level of most computer offerings, find it difficult to gain this experience and knowledge about the field."

In his talk at the Computer Faire, "Programming for Everyone: A Rationale and Some Teaching Strategies," William Wagner of Mt View, California, High School, addresses the problem of bringing computers to individuals who do not normally seek them out, and whose experience and opportunities are limited. First, the reasons for broadening the scope of computer education are presented. Then an argument is presented for the inclusion of elementary programming in any such non-technical introduction to computers. Finally, two experiences the author has had teaching such a course are described — in a high school programming class with no math prerequisite, and in an in-service course for non-technical adults offered through the local community college.

## Statistics Programs For the Person Of Average Means

Now available from Radio Shack is a system of computer programs designed for the analysis of data in business, education, medicine, government administration, and other fields. Advanced Statistical Analysis may be used with Level II BASIC or Disk BASIC on a 16K Radio Shack TRS-80 Microcomputer System.

The Advanced Statistical Analysis system consists of 13 computer programs stored on cassette tapes, and a comprehensive manual which takes the user through each program step-by-step. Each program in the system was written to interact with the user and to guide the user in conducting statistical analysis.

Included in the system are ten programs for describing data sets and conducting statistical data analysis; two utility programs for preparing, updating, and listing data files stored on tape or disk; and a program to aid in selecting data samples.

Programs supplied with the Advanced Statistical Analysis system are: Tape Data Files, Disk Data Files, Random Sample, Descriptive Statistics, Histogram, Frequency Distribution, Analysis of Variance, T-Test for Matched Pairs, Correlation & Linear Regression, Multiple Linear Regression, Time Series Analysis (two programs), and Chi Square Analysis.

For further information on the Advanced Statistical Analysis program or Radio Shack's complete line of TRS-80 software, contact: Radio Shack Computer Customer Services, 205 NW 7th St, Fort Worth TX 76106.

## Speak at the 6th Faire

It's too late to submit a paper for presentation in the Conference Program of the 5th Faire, but you can get a good running start at the 6th Faire, to be held in San Francisco in the first part of April, 1981.

Request a 6th Faire Speaker's Kit: Computer Faire, 333 Swett Rd., Woodside, CA 94062, (415)851-7075.

Deadline for receipt of completed, camera-ready papers (for inclusion in the Faire's *Conference Proceedings*) will be December 1, 1980.

## RUMORS . . .

*continued from page 1*

market UNIX as part of their computer systems . . . for a \$35K-\$40K one-time fee plus \$50K advance against royalties (the company, not the machine purchasers, has to pay it, and it can then be prorated over many machines), plus a paltry couple thou or so, per machine.

This is the full-blown, true-blue, honest Bell Labs UNIX — not some home-grown (or underground) subset. We hear that there is at least one company in the S. F. Bay area, Onyx by name, that is busy having the C compiler, then full UNIX, implemented on their Z8000-based system. The system will include a 20+ megabyte Winchester disc and tape cartridge backup. Rumor places the end-user price of a small multiuser system at about \$17K-\$20K.

(Sadly, and foolishly in this writer's view, they are *not* planning to offer an industry-compatible (= IBM-compatible) tape drive . . . meaning that all those potential customers who'd love such a system if they could transfer massive files back and forth between IBM dinosaurs and real computers won't buy it 'cause they can't do it. Ah well — that's the nice thing about those kinds of companies; they're obviously the kind that enjoy creating a market for some more responsive competitor's system.)

For those not familiar with UNIX: It is a multi-user, multi-tasking (meaning one user can simultaneously run multiple tasks or programs) operating system, originally designed to run on a medium or larger PDP-11. Except for a very small kernel of I/O and interrupt handlers that are programmed in assembler for the target machine, the entire system is programmed in a very nice, block-structured (i.e. similar to Algol or Pascal) high-level language called 'C'. Not only is it attractive because of its multi-tasking/user and C-based features; it is particularly attractive due to the massive multiple volumes of applications software already part of the system.

Until recently, UNIX was available at almost no cost to colleges and universities, and at outrageously high costs (without support) to private users. Perhaps this new approach — charging much loot to those who can make a profit from resale of the system (and who will offer support for it, we hope) — is an excellent alternative for getting

*continued on page 8*

# Programming is Kidstuff for Some Primary Students

Computers are for kids — at least that's what the 30 students in a Talented and Academically Gifted program at the Woodland School in Spotswood, New Jersey believe.

These students in grades four through seven, have been writing their own programs covering everything from geography to graphics on a Radio Shack TRS-80 microcomputer for about a year now. They are part of a Talented and Academically Gifted (T. A. G.) program that obtained a TRS-80 computer in January of 1979 with a grant from the New Jersey Department of Education.

Now, at the request of teachers within the school, the students are creating and writing computer programs for use in the classroom. The programs are designed for grades one through seven in the areas of mathematics, social studies, science and language arts, and to prepare students for quizzes.

A computer program has its beginning with an idea. This idea is developed by the student until it becomes a set of instructions for the computer to follow. When the thought process is completed by the student and the idea has become a plan, the program is ready for the computer.

The program — a step-by-step set of instructions demanding decision-making and attention to detail — is entered into the computer via the keyboard. The students are instructed bi-weekly in computer programming in BASIC (the computer "language" of the TRS-80). For homework they write their own programs.

Because of their enthusiasm for the TRS-80 and the success they have had with it in the classroom, the students at Woodland School were filmed recently for the syndicated children's television program, *Kidsworld*, using the TRS-80.

## PROMOTES CREATIVE & LOGICAL THINKING

According to the T. A. G. facilitator, Laura Zatz, "The TRS-80 represents a challenge to my students because it is something new in learning and promotes creative and logical thinking. Even slow learners can benefit from using the TRS-80."

The Woodland School has plans for obtaining a more powerful version of the Radio Shack computer as soon as state funds are available. "The students are ready to forge ahead with the TRS-80 Level II. They have found that computer programming is a fun way to learn," says Laura.

The Radio Shack TRS-80 microcomputer is said to be the world's best-selling microcomputer. It is being used across the country in small businesses, schools and homes by all ages and for a variety of needs.

The TRS-80 is available at over 7,000 Radio Shack stores and dealers across the country, and in Canada. Headquarters for Radio Shack and Tandy Corporation (NYSE) is in Fort Worth, Texas.

## Trade Association to Meet During 5th Computer Faire

The Microcomputer Industry Trade Association (MITA) will hold its first 1980 General Meeting, during the 5th West Coast Computer Faire in San Francisco. The meeting will take place in the Civic Auditorium, on Friday afternoon, March 14, beginning at 6 p.m. (immediately following the close of the exhibits).

The meeting is open to all members and prospective members — anyone in the management of any company addressing the microcomputing industry. This includes manufacturers, distributors, retailers, software houses, publishers, show organizers, and so forth.

### Conference Session

## Coarse Wear? . . . Course Where? . . . Courseware!

"As a courseware developer," says Silas Warner, I have had many requests along these lines: 'I have written (or found) a great textbook in xyz. If I put that book on the computer, what will I have to do to avoid copyright problems?'

"To which my answer has always been, 'If you want to put a textbook on a computer, put it on top of the keyset, and tell the students to read it. It's cheaper that way, and the student can take the book home.'

"One of the worst things that a computer can do is display long passages from a book. It essentially wastes the power of the computer. There is no reason why a textbook can't be packaged as part of a computer-based course, and the computer assign 'homework' in the book."

Silas, in his Computer Faire talk, "You'd Like to Teach the World to WHAT?: A Guide to Writing Microcomputer Courseware," presents a guide for writing educational programs, testing them and making them available to students. His presentation covers: what is courseware, what the computer is not, what the computer is, what are you going to teach?, how are you going to teach?, how to ruin courseware, nice touches, programming your lesson, testing, and out into the world.

## Avoid Reg Lines: Prereg for the Faire

A considerable number of bookstores and computer stores are carrying preregistration packets for the 5th West Coast Computer Faire. These include the door passes that allow immediate entry to the convention center for all three days of the Faire. By preregistering 'through participating dealers', you completely avoid the hassle and wasted time of waiting in the on-site registration lines.

Additionally, it is an excellent opportunity to visit your local dealer and see their latest offerings.

A list of prereg sites appears elsewhere in this issue.

Note: The Computer Faire does not handle preregistration by mail. However, a number of the prereg outlets do accept mail orders — if you order early enough (remember the speed of the U. S. Snail Service).

## Voice No Doubt About This Stress Analyzer

The Truth Machine is a microcomputer that immediately pinpoints deception by analyzing inaudible 'microtremors' in the human voice, according to Telestar, Inc., of Wormleysburg, Pennsylvania.

Although police departments, intelligence agencies, and large corporations have quietly been using voice stress analyzers for several years, these early units cost several thousand dollars, making them out of the reach of the average businessman. Telestar is now offering, for \$149, a voice stress analyzer that it claims is more reliable and sensitive than the earlier units.

The Truth Machine measures 5 x 7 inches, and is sufficiently compact and lightweight to fit into a desk drawer or briefcase. A step-by-step instruction manual is included. The voice can be picked up by a built-in microphone, by a telephone attachment, or by a tape recorder patch cord. A simple digital display indicates stress in the speaker's voice, and tells the listener when the speaker is exhibiting stress.

Contact Telestar, Inc., 200 South Front St., Wormleysburg, PA 17043; (717) 763-7882.

"A large number of installed systems work by fiat. That is, they work by being declared to work." — Anatol Holt

### Conference Session

## Microcomputer in Japan: An Orientation

"The microcomputer market is one of the growing markets in Japan in spite of the low-growth economy in the last several years after the oil shock," says Seiichiro Yahagi, Managing Director of Nippon Time Share Co., Ltd.

In his Computer Faire talk, "The Microcomputer Market and Users in Japan," Seiichiro reviews current trends in his country.

## MEET SOMEONE

There is an excellent place to rendezvous with friends and business associates at the Computer Faire in San Francisco. Arrange to meet them in the balcony overlooking the Civic Auditorium exhibit arena. Suggest that they look for you in the left, right, or center seating area.

### Conference Session

## Wonders of Pascal

LIL1,2 Providing an introduction to Pascal, Datamed Research president James Gagne will elaborate on his recent *Kilobaud Microcomputing* article in his Computer Faire talk. His introduction will cover: structured programming, fundamental concepts, data types, input and output, standard functions, dynamic variables, and a brief description of UCSD Pascal.

# PASCAL FROM START TO FINISH

### The BYTE Book of Pascal

Edited by Blaise W. Liffick  
Based on the growing popularity of Pascal as a programming language, numerous articles, language forums and letters from past issues of BYTE magazine have been compiled to provide this general introduction to Pascal. In addition, this book contains several important pieces of software including two versions of a Pascal compiler — one written in BASIC and the other in 8080 assembly language; a p-code interpreter written in both Pascal and 8080 assembly languages; a chess playing program; and an APL interpreter written in Pascal. \$25.00 Hardcover pp. 342 ISBN 0-07-037823-1

### Beginner's Guide for the UCSD Pascal System

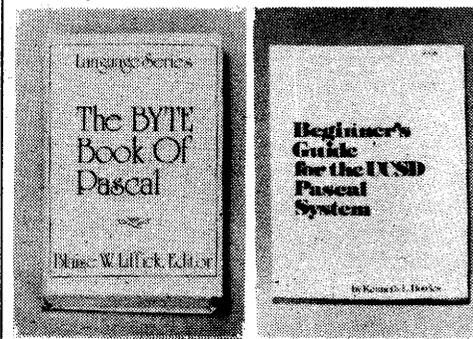
by Kenneth L. Bowles  
Written by the originator of the UCSD Pascal System, this highly informative book is designed as an orientation guide for learning to use the

UCSD Pascal System. For the novice, this book steps through the System bringing the user to a sophisticated level of expertise. Once familiar with the System, you will find the guide an invaluable

reference tool for creating advanced applications. This book features tutorial examples of programming tasks in the form of self-study quiz programs. The UCSD Pascal Soft-

ware Systems, available from SofTech Microsystems Inc, 9494 Black Mountain Road, San Diego CA 92126, is a complete general purpose software package for users of microcomputers and minicomputers. The package offers several interesting features including:

- Programs which may be run without alteration on the General Automation or DEC PDP-11 minicomputers, or on an 8080, 8085, Z80, 6502, 6800, or 9900 based microcomputers.
- Ease of use on a small, single-user computer with display screen and one or more floppy disk drives.
- A powerful Pascal compiler which supports interactive applications, strings, direct access disks, and separately compiled modules.
- A complete collection of development software: operating system, file handler, screen oriented text editor, link editor, etc.



Please send  \_\_\_\_\_ copies of Beginner's Guide for the UCSD Pascal System  
 \_\_\_\_\_ copies of The BYTE Book of Pascal

Name \_\_\_\_\_ Title \_\_\_\_\_ Company \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State/Province \_\_\_\_\_ Code \_\_\_\_\_

Check enclosed in the amount of \$ \_\_\_\_\_  
 Bill Visa  Bill Master Charge  
 Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_  
 Add 60¢ per book to cover postage and handling.

**BYTE BOOKS** 70 Main Street, Peterborough, NH 03458 P10

\$11.95  
ISBN 0-07-006745-7

## Conference Session

## Being Drunk with Information May Have Staggering Consequences

Interface Age reports that home computer equipment sales are projected to be \$1 billion in 1980 from a standing start in 1977.

Ron Jacobson of the San Francisco State University Broadcast Communication Arts Department states, "Our society is in transition, moving from a service to an information-oriented economy. Within sight is mass usage of a public information-utility network, where data flows from host computers into the home computer terminal as freely and easily as water flows from the kitchen faucet. The possibilities of such a communications system are tremendous, the consequences staggering. What is at stake is a revolution of our sensibilities and the way in which we live our lives."

Speaking on "The Emerging Personal Computer National Information Utility Network," at the Computer Faire, Ron pursues an historical and critical approach to the subject by reviewing the characteristics of some present systems operating in the world today, and by trying to establish criteria for the systems of tomorrow.

## Conference Session

## Business Computers: Turnkey or Turkey?

Why should a small business use a computer? What are the alternatives? How can the pains and the costs associated with computerization be minimized?

These issues will be dealt with in simple terms, oriented towards the prospective novice computer user in a talk at the Computer Faire by Byte Shop Computer Stores' founder and president, Paul Terrell, and Compumax president Thomas Bun.

An innovative approach will be described, based on a set of computer programs that come in a form completely ready to use, yet can be understood and set up rapidly, with minimal restrictions and great ease of change and extensions of the particular requirements of an individual business.

## San Francisco Visitors' Bureau

The San Francisco Convention & Visitors' Bureau offers a variety of information to assist out-of-area visitors to 'The City.' The Bureau may be of particular assistance to those attending the 5th West Coast Computer Faire, to be held in San Francisco's Civic Auditorium & Brooks Hall, March 14-16.

Among other things, the Bureau offers guides to restaurants and 'night life,' and has a daily events 'hot line' — (415) 391-2000. For guidebooks and more information, call or write: San Francisco Convention & Visitors' Bureau, 1390 Market Street, San Francisco CA 94102; (415) 626-5500.

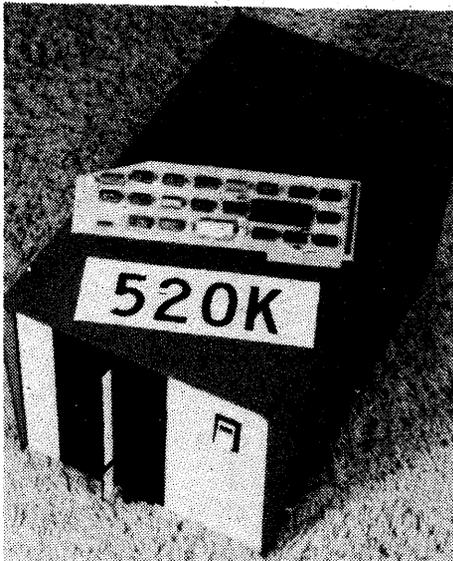
## Conference Session

## Bison Products Do Not Use Buffalo Chips

A double-sided, full-sized floppy disk subsystem for the Apple II is now available from Carl Dick, Distributor.

The system, known as Bison Products AP8x2, features a Remex drive housed in a disk cabinet. The disk controller resides in Apple's peripheral slot #7.

The system is compatible with DOS 3.2 and comes with software utilities to quickly copy between drives.



The systems will be available at the Computer Faire. The introductory price is expected to increase soon after the Faire to accommodate a national dealer program.

For additional information, contact: Carl Dick, Distributor, Box Q, Sherman Oaks CA 91423; (213) 349-2365.

## Conference Session

## Taking Away HIPO Leaves a Pot o' Mess

Master Schedule: a management tool that means nothing to any concerned party, but is required by persons removed from the project.

In his talk, "A Case Study in Unstructured Software," to be delivered at the Computer Faire, Boeing Aerospace Specialist-Software Engineer Howard Hollander details a nonfictional account of an unstructured software project using HIPO (Hierarchy plus Input-Process-Output) — a degenerate tale, indeed.

## Conference Session

## The Starship Simulation Project

The Marin Computer Center has begun building a Starship.

"Unfortunately," say the Center co-directors, David and Annie Fox, "the ship we are building will never leave the ground, but its crew will never know the difference."

"Anyone who has ever seen a clear sky at night has desired to leave this planet (if only temporarily) and travel out into a sea of stars. People have been wondering about such an experience for thousands of years. Unfortunately, actual space technology has been hard pressed to keep pace with human dreams, and our imaginations have been further stimulated by science fiction books and films. And yet, partaking in these media creates a space experience that is a rather passive one."

"What would it really be like to be a part of the crew of a galactic cruiser? With the use of computers, within the context of a complete sensory environment, we are creating an opportunity for people to find out."

Through the auspices of a grant from the San Francisco Foundation, Marin Computer Center has, for the past 12 months, been putting together a full-scale, operational bridge of an interstellar vehicle. At the Computer Faire, David and Annie will talk about the why, what, who, and where of the Starship Simulation Project.

The underlying philosophy of this simulation, they say, "is that all life forms are intrinsically worthy of respect. It is unethical to destroy either these life forms or their creations. The ship has a wide range of technological devices, but no 'weapons'. There will always be at least one or two workable alternatives to the use of violence. For example, if the players viewed the 'enemy' as someone whose goals conflict with those of the Starship, then the conflict might be resolved by discovering a way to expand the Starship's goals to INCLUDE those of the 'enemy'."

"A good programmer must have a zoom-lens mind with which to view problem environs." — Jim Warren

## RUMORS . . .

continued from page 6

UNIX out of the [Bell] Labs and economically into the hands of a multitude of eager users.

### Apple Brew

This time, our Name Phreague of the Week award goes to the Little Rock Apple Addicts [17 Brookview, Little Rock AR 77209]. (Sounds a little punchy to us.)

The two runners up cheated by using their addresses:

There's the local electronics company with an address at, "2 Disk Drive". Then there's Microcomputer Systems, Inc., at 243 W. Chocolate Ave. in Hershey, PA 17033. (Ohh, how nutty!)

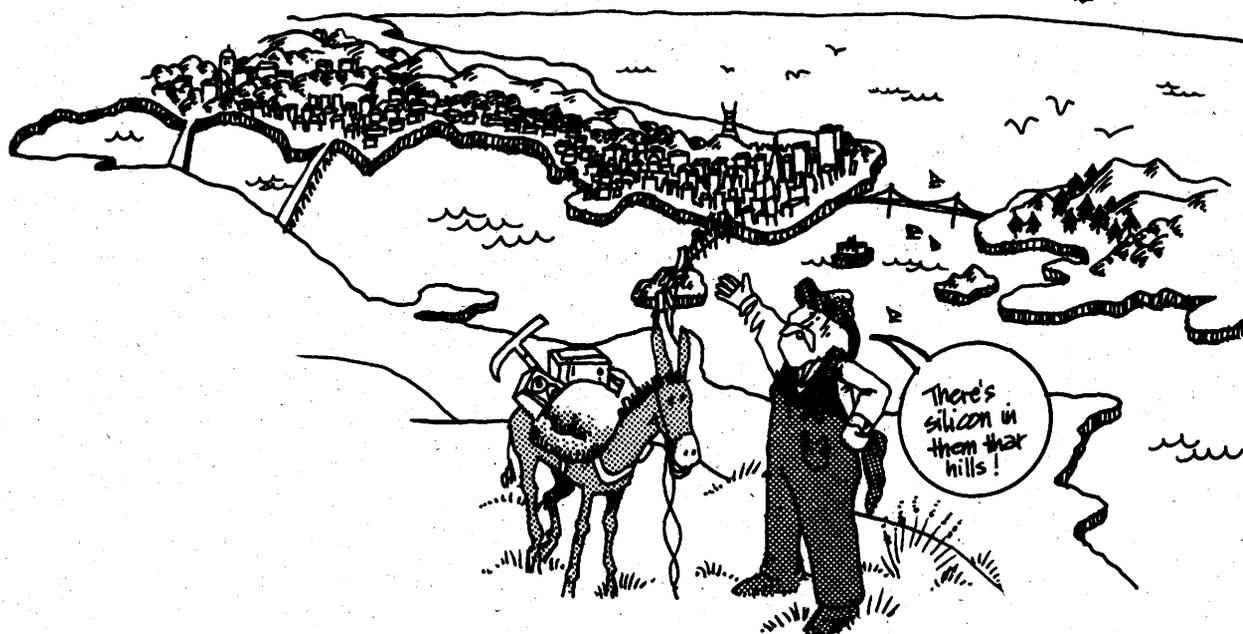
### Commodore Contender

Speaking of Apple, we hear that Commodore has decided to try competing with Apple [smile Chuck; I'm jokin']. Commodore, creator of the Pet, was the the originator of the consumer computer, being the first company to announce and ship a complete, turnkey system for less than \$700 (we state this in spite of some peoples' denial that it had a keyboard). However, apparently operating on the naive belief that consumer computers were the same as hand-held calculators (with which Commodore was eminently successful), they effectively stepped aside to allow Tandy to flood the market with the econo-TRS-80 (and mass media ads), and Apple — by doing a number of things right — to establish themselves as the clear-cut leader in top-o-the-line consumer computers.

Now, apparently Commodore has decided to try doing what Apple has been doing for some time. The reader may reasonably expect to see Commodore introducing Petfood such as color video & graphics, screens accomodating 80 character lines, real keyboards, and perhaps such goodies as touchscreens. Also, there is a company out of Los Altos that has built a Pet input device that will accept hand-printed characters (we've seen it; it works).

And, of course, we have noted that both Commodore and Radio Shack are exhibiting at the Computer Faire, while Apple is not. Who knows, perhaps Apple is planning on

continued on page 11



## The Terminal Condition Is Either Up or Down

After several years of growth rates hovering above 30%, unit shipments of alphanumeric CRT terminals fell to a 22% growth rate during 1979. Although the industry continues to grow rapidly, the rate is below manufacturer's projections, according to a recent study by Venture Development Corporation.

The study *Alphanumeric CRT Terminal Industry: A Strategic Analysis*, points out that projections made by terminal manufacturers during the first quarter of 1979 signaled a yearly growth rate "as good as or better than 1978." This growth rate has not materialized as second-half shipments slowed when the heavy backlogs from 1978 had been met.

Combined shipment volumes of conversational, editing, and processing CRT terminals reached 473,000 units in 1979. These units were valued at \$1.6 billion, up 13% over 1978.

Sales of the low-end conversational CRT terminals were up 28% over 1978. Shipments of these "glass-teletype" or "dumb" terminals, long thought to be declining, made significant gains, primarily due to price reductions. Product enhancement and added features, such as cursor controls and a page or two of buffered memory, also spurred the shipment growth of these low-end terminals.

Shipments of editing terminals composed of the IBM 3270 and terminals offered by 3270-compatible manufacturers increased only 13% in 1979. Demand for 3270-type terminals is high, but delivery times have been stretched out as production rates have reached their current limits. IBM's delivery problems have given 3270-compatible manufacturers a second wind following the 3270 price reductions and product enhancements announced in 1977.

The non-3270 editing CRT terminals led all categories in shipment growth during 1979. Shipments of this class of CRT terminal increased 31% over 1978 levels. Non-3270 terminals have at last caught up with the 3270-type terminal. By 1981, non-3270 editing terminals will surpass the 3270-type in annual shipments and continue to widen the gap through 1984.

Thanks to distributed processing concepts and advances in communications, the processing CRT terminal category is beginning to expand. These "intelligent" terminals composed of single stations and "clustered" units are expected to be the fastest growing sector of alphanumeric CRT terminals. 1979 shipments of "keystations" or clustered units were up 16% over 1978. VDC expects this growth rate to increase to 28% during the next five years, 1979-1984.

In analyzing the competition, the VDC study places IBM as the dominant manufacturer with a 23% market share of the installed base of all alphanumeric CRT terminals. This percentage is considerably below IBM's share of other computer equipment markets, but is nearly four times greater than any other CRT terminal manufacturer. IBM's strength is in the 3270 market, but 3270-compatible manufacturers are continuing to chip away at IBM's share. During 1979, IBM's share of the 3270 market eroded to 65% as the 3270-compatible manufacturers increased their share by 3% to 35%.

For the long term, VDC expects the total installed base of alphanumeric CRT terminals to grow at a compound rate of 21.6% for the five-year period 1979 to 1984. This growth rate will yield over 4,500,000 units installed at year end 1984, up from 1,700,000 at year-end 1979.

For further information, contact: Venture Development Corporation, 1 Washington St, Wellesley MA 02181; 617-237-5080.

Conference Session

## Give 'Shooting Stars' Your Best Shot

Shooting Stars is a puzzle that can be played on small computers. The shooting Stars puzzle is solved by transforming an initial pattern of stars into a final pattern of stars in the minimum number of moves. The puzzle is similar in structure to a network with the nodes representing patterns, and arcs representing moves. The solution to the shortest-path problem in the network is also the solution to the puzzle.

In his talk, "Solving the Shooting Stars Puzzle," at the Computer Faire, Joel Shprentz offers a FORTH program that solves the puzzle on a TRS-80.

In Joel's approach, "the algorithm used to find the shortest path in the Shooting Stars network is a modification of Dijkstra's algorithm for the shortest-path problem.

"Information is kept in two places during the solution process. Nodes awaiting processing are maintained in a queue. The best arc to follow from each node is kept in an array. The best arc is the one that lies on the shortest path to the final node. Initially, the final node is on the queue and all best arcs are set to 255 (an invalid arc number that flags an unprocessed node).

"The shortest path is found by starting at the final node and tracing backward through the network, recording the best arc to take from each node. After initialization, a node is removed from the queue and all nine possible arcs (one for each grid position) ending at the node are traced backward [as described in his talk]. The process of removing a node from the queue and tracing the arcs backward is repeated until the queue is empty."

"Whenever anyone says, 'theoretically,' they really mean, 'not really.'" —Dave Parnas

## SEEDing the Database

The first CODASYL-compatible database management system for microcomputers is being distributed by Microsoft of Bellevue, WA. Micro SEED, in its initial release, runs under CP/M with Microsoft's FORTRAN-80 as the host language. It is a useful software tool for microcomputer applications in which the data base is too large for conventional file handling methods.

Micro-SEED is a compatible subset of the larger SEED DBMS, originated by International Database Management Systems, Inc., in Philadelphia. In addition to the CODASYL recommendations, Micro-SEED implements extra features, such as self-optimizing FIND commands, that further streamline access to the data base.

Written primarily in FORTRAN (with isolated assembly language routines for I/O and buffering), Micro-SEED is easily transported to various 8080/Z80 hardware configurations. It is implemented under CP/M like a FORTRAN application and therefore places very little extra burden on operating system tasks. A 64K microcomputer system is required to support the DBMS.

Micro-SEED uses the CODASYL schema, sub-schema and area methods to divide and define the data base, providing easy access from user programs. The routines for managing the database (data manipulation language) are then called from the user's application programs, written in FORTRAN or other host language.

A relational query language and report generator called HARVEST and an interactive system utility program called DBLOCK will be available as add-ons to the system in 1980. They will run on upward compatible versions of Micro-SEED that utilize 16-bit microprocessors. Additional host languages (Microsoft COBOL-80, PASCAL-M and compiled BASIC) will also be supplied in future releases.

For more information, contact: Microsoft, 10800 NE 8th, 819, Bellevue WA 98004; 206/455-8080.

"ALGOL 68 . . . that's Overextended Algol . . ."  
—Tony Hoare, 1979 U.S. Santa Cruz Summer Computer Science Institute

Conference Session

## Tracking the Microengine

Taking a critical look at the new Pascal Microengine will be Tom Pittman in his Computer Faire talk, "A User Looks at the Western Digital Pascal Microengine." Features to be examined are speed of execution, ease of operation, conformity to proposed Pascal and Floating Point standards, completeness of documentation, adequacy of support, any quirks in the system that happen to turn up, and of course, is it really worth the money?

Conference Session

## Plain Programming: PILOTing Without A New Twist

"What I call the 'Spaghetti Syndrome,'" says Robert Watkins, "is the tendency of computer programs to consist of such twisted, convoluted threads of logic that they resemble the proverbial plate of spaghetti. If this is not true from the very start, then certainly as changes and enhancements become necessary, the program listing becomes less obvious and clear as to what is to be accomplished.

"Whether the program in question is one written in BASIC or a lesson written in PILOT, this occurs too frequently. The comparison with BASIC is intentional, since although BASIC and PILOT were developed for different reasons, they are both prone to 'Spaghetti Syndrome' programming."

Robert's Computer Faire talk, "Lesson Design in PILOT", focuses on the programming task using the CAI language PILOT. A method of lesson design that makes construction of PILOT lessons easier and less prone to programming error is presented. This method is part of a class in using PILOT that is taught at The Computer Merchant.

# WHAT'S GOING ON?

(with the "Original" TRS-80® Users Journal)

We will be at the Faire, Booth 1122C, Brooks Hall

In the Jan-Feb 1980 issue of the 80-U.S. Journal you will find a Text Editor, complete with on-screen editing, written in BASIC, and it's for both the Mod I and Mod II TRS-80. There is also a Lower Case Mod, without hardware modification, which is a simple, short BASIC routine! As if that weren't enough, there is also a complete listing for a "College Selection" program, a Model Rocket Design & Performance program and a Cassette Library (index) program! There is an article on the Exatron Stringy Floppy, a discussion of CP/M and in Assembly Language, a program which allows

you to define Keyboard Macros. Plus all the regular features of course, with tutorials, New Products, Reviews and the Business Section. We call it our "80-cubed" issue - 80 pages, in 80-U.S. for 1980! It isn't called the "TRS-80 Users Journal" for nothing, it really is just that! It is published bi-monthly, and costs \$16.00 per year in the US. Get a sample current issue (first class mail) for just \$3.00. Use your VISA or Mastercharge and call (206) 475-2219 today! Or, send check or Money Order to: 80-U.S. 3838 South Warner Street, Tacoma, Washington 98409

Yes, we are the originators of Android Nim and other animated graphics/sound software!

## The 80-U.S. Journal

TRS-80 is a trademark of Radio Shack, a Division of the Tandy Corporation



## FLEXing for Motorola

Technical Systems Consultants, Inc. announced recently that a version of their FLEX disk operating system is now available for Motorola 6800 EXORciser systems using EXORdisk II or III. Some of FLEX's features are dynamic filespace allocation, random and sequential file-accessing, batch job type program entry, user startup facility, automatic drive searching, English error messages, and over 20 commands for all normal disk operations. No hardware modifications are required for operation with the possible exception of memory addressing. The user simply boots FLEX from a disk instead of MDOS. This makes the EXORciser compatible with most 6800 disk systems and allows it to run any FLEX-based software. Support software from Technical Systems Consultants includes, editor, assembler, debug package, text processor, two, fast BASIC interpreters, sort/merge, and more. FLEX for the EXORciser comes with a disk editor and assembler and a full set of manuals.

A 6809 version will be available soon. Contact: Technical Systems Consultants, Inc., Box 2570, West Lafayette IN 47906; (317) 463-2502.

### Conference Session

## Structured Flowcharts: A Hybrid Approach To Program Design

"Flowcharts lead to poor program design," says Gregg Williams. "Structured pseudocode (or, equivalently, a Pascal-like language) does not have the visual appeal of a graphic design technique."

The notation described in Gregg's Computer Faire talk, "Structured Flowcharts - A Hybrid Approach to Program Design," results in what he calls a 'structured flowchart', which attempts to combine the best features of flowcharts and structured pseudocode. When read from top to bottom, the structured flowchart describes the task to be performed; when read from left to right, it describes successive decompositions of a task into its corresponding subtasks. In this manner, the technique allows top-down structured design.

"The notation," says Gregg, "evolved from an idea presented by O. Ferstl in the Programming Languages subgroup magazine (SIGPLAN) of the ACM. It has evolved over many months of my daily use at Byte Magazine, and it is responsible for the existence of a 35-page COBOL program I wrote that was later expanded to 75 pages without any loss of program clarity or maintainability.

"Of course, this method (or any other secondary method) is of little use when the target language is Pascal or any Pascal-like language: there, the design effort produces the computer program directly. But there are still many people who must write in an unstructured language - the average hobbyist, in BASIC; the business programmer, in COBOL; other programmers, in PL/I, FORTRAN, and other languages. My talk assumes that you will be able to translate the constructs described into the target language, and I provide a reference article for the treatment of the translation process to BASIC."

### Conference Session

## Energy Management: A Dim Future Is Not Watts Current

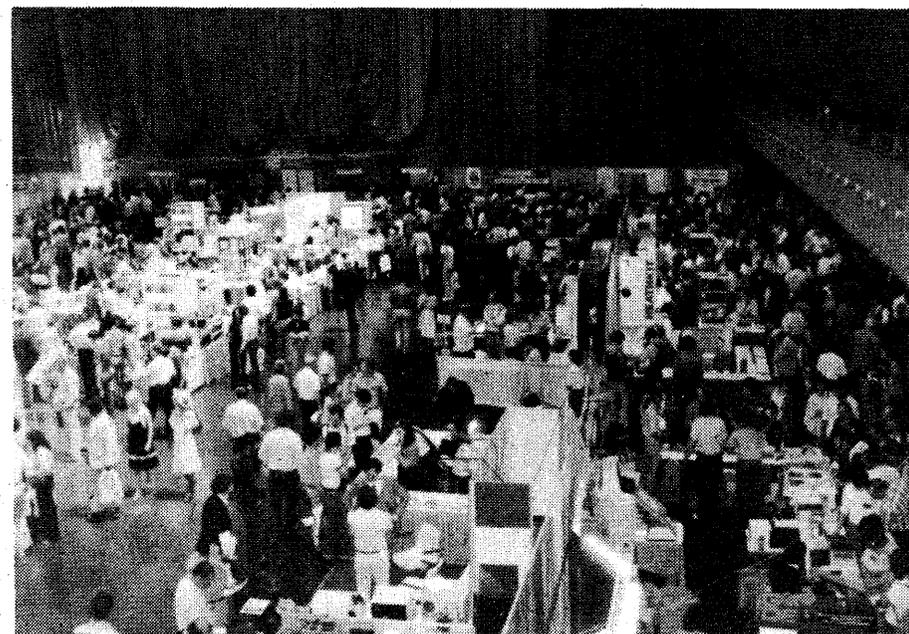
Helion's MicroManager, a dedicated CMOS process control computer, developed specifically for energy conservation in the home, is the subject of Helion President Jack Park's talk at the Computer Faire.

"The MicroManager," says Jack, "is a complete computer system dedicated to performing tasks related to home energy management and security. The prototype version has two functions: it performs home energy management according to a 'home profile' provided by the dweller concerning weekday schedules as well as weekend requirements; it performs a modest amount of home security control.

"The MicroManager serves as a home energy manager by automatically controlling energy consumption according to a user-input description of the dweller's daily requirements. That is, at initialization, the MicroManager requests information such as desired temperatures throughout the day (along with acceptable variations) and time(s) of day for peak energy usage in the dweller's normal schedule. This provides a 'home profile' which tailors the MicroManager to the user's individual requirements. Once initialized, the MicroManager automatically manages energy consumption in the home.

"The impact of the MicroManager on daily life in the home depends on the way that the user configures the system. At one extreme, the only perceptible difference to the dweller is the reduction in energy consumption (as reflected in utility bills.) At the other extreme, the user may choose to adopt a new, energy-conscious lifestyle and may use the MicroManager to enforce miserly consumption. Of course, manual override of the system is allowed at any time. Also, whenever necessary, the user may reset the 'home profile' to reflect changes in the daily schedule."

"I bought too much, but not enough too much." -Jonathan Sachs



A scene from last year's Computer Faire.

### Conference Session

## Becoming a Technical Writer

"Technical writing is one of the easiest fields to get into, and one of the hardest to stay in. Why easy to get into? Because there is a crying need in the microcomputer industry. Every week another company wakes up to its need for good, technical communicators. Why hard to stay in? Because it is demanding, exacting; because the results of your work will be out there for all the world to see (And for your boss to see.) If you're a dud, it will show. But if you are competent, conscientious, professional - then Silicon Gulch can be a technical writer's El Dorado," says Sharon Rosa.

In her talk, "Breaking into Writing for the Microcomputer Field," at the Computer Faire, Sharon covers the following: what does it take?, -the writer's background, getting started, presentation, security versus freedom: advantages & disadvantages for captive employment and free-lancing, how much can one earn?, and marketing yourself.

"Good judgement comes from experience. Experience comes from bad judgement." -Jim Horning

### Conference Session

## Display-Listings: Rolling Your Own

Have you ever heard of speed reading a program on a CRT display? Not likely, because most displays use a method of scrolling which approximates a ratchet motion.

John Cater, an Intelligent Systems Engineering manager, calls this type of scrolling, "ratcheting." By using some crafty software and a standard CRT controller chip, John claims in his talk at the Computer Faire, that a CRT display can be easily constructed which provides program listings and visual outputs exactly like the rolling movie credits on your favorite tv show. His discussion will detail the software and hardware necessary to get you started on your own rolling CRT display.

## General Ledger Reports For Financial-Program Duty

Microcomputer Consultants recently introduced the MCC Business Software Series, a comprehensive group of programs developed for use on microcomputer systems in the business world.

This series has been developed to provide an efficient business environment by reducing the time-consuming and error-prone, manual processing of the basic accounting and billing functions with the accurate preparation of professional-quality, business documents.

All programs in the Business Software Series are designed for easy use by office personnel, and are accompanied by a detailed, step by step, operator's manual. All systems are menu driven and use a unique method of e data entry that is highly interactive, easy to understand and checks for operator errors immediately. Unlike many other programs that are modified versions of programs that run on minicomputers, these programs are designed specifically for use in the microcomputer environment.

Systems available include general ledger, accounts receivable, accounts payable, invoicing, and inventory control, for use in retail and wholesale environments. The programs are designed for use under the CP/M operating system and require 48K RAM and a video display with an addressable cursor.

For further information, contact: Microcomputer Consultants, 231 E Street #9, Davis CA 95616; (916) 756-8104, and see their demonstration at booth 208 at the Computer Faire.

### Conference Session

## Video Interfacing: What You Get Is What You See

Recorded video instructional programming may be combined with interactive computer programs and presented to students via computerized videotape. If desired, the perfected programs of instruction may be transferred to the videodisc as that technology becomes useful.

The interactive training system, CATI (computer assisted television instruction), makes use of existing videotapes or newly created video training material. Movies, slides, stills or video-camera pictures are recorded on videotape, usually with a small video camera. The videotape machine is interfaced with a microcomputer. The microcomputer is then programmed to find desired segments on videotape and display them on the same screen used for presentation of computer data.

The CATI system, developed by Robert Whitney and his son, David Whitney, gives the instructional programmer the tools with which to shape interactive video programs from existing or new videotapes which may then be presented directly to students with the same equipment.

Robert's Computer Faire talk, "How to Produce Random Access Videotapes, Videodiscs and Other Intelligent Wonders with Your Microcomputer," will provide an explanation, description and demonstration of the CATI interactive instructional system.

## RUMORS . . .

continued from page 8

reciprocating Commodore's early-on politeness by now taking their turn at stepping aside in the marketplace. Such a gentlemanly industry we have here.

### Apple Sighder

But, lest a rumor-listener think that Apple is sitting on its laurels (would that be botanical miscegenation?), the gossip galley has cooked up the rumor that Apple is also about to intro some new machines.

We have heard the repeated word that Apple will shortly announce a Pascal machine. This will not be simply an Apple running an improved UCSD Pascal system — but a completely engineered, single-language Pascal system. (It could be comparable to the Pascal MicroEngine announced over a year ago by Western Digital — note: Tom Pittman will be giving a detailed owner's report on his finally-received WD MicroEngine, during the Faire).

If Apple does this, we suspect that they will target their marketing efforts for the college and university crowd, where Pascal is now firmly entrenched, as well as the small minority of high schools that have the faculty — both human and financial — to be interested in such dandy machines.

We also hear that Apple is going to seriously pursue the business market (along with virtually every other microcomputer system manufacturer in the world).

### IBM to Compete?

Then theres the word that IBM is dropping prices on some of their small systems and subsystems (e.g. disc drives) by as much as 33%. Why — another 40% or 50% and they may even begin to be price competitive with all us micro folk.

### Thinkertoy™

Propaganda posters seeking speakers for the last several Computer Faires™, included the phrase, "Tutorially Talk of Your Tantalizing Thinkertoys" . . . with nary a "TM" trademark bug. When George Morrow saw this, he called and asked that the Faire put TM on Thinkertoys, 'cause he was filing for trademark registration of the word. He also allowed as how his attorney would repeat that request, presumably in stronger terms — which we requested (as yet, however, we haven't received even one 'party of the first part' . . . how disappointing).

[George is the innovative creator of the definitive S-100 motherboard which he calls the Wunderbus™, available from Morrow's Microstuff™. He is also highly active — vocally and technically — in several of the IEEE™'s microcomputer-related standards committees, and has just been elected to the Board of Directors of the Microcomputer Industry Trade Association.]

The reason that this is worthy of mention is the peculiar fact that George makes no pretense of being the first to dream up the name 'Thinkertoys'. In fact, a toy store near Stanford sez that it has been

continued on page 16

### Conference Session

## Even an Unbeastly Artist Can Draw out the ANIMAL in the Computer

ANIMAL (ANIMATION Language used in creating animated scenes in color on a personal computer) will be the subject of a talk by Computer Automated Graphics' president Jim Blum at the Computer Faire. ANIMAL provides commands for creating animated scenes, running them in real time, and for saving and retrieving them from diskette. (A scene consists of one or many individual frames which are "run" sequentially to create the animation.)

One of the draw subcommands is "Paint", a continuous drawing mode (has no prompts). Dots (pixels) are placed on the screen where and whenever the stylus is held down and moved across the BITPAD. This gives the effect of a paint brush being moved across the screen. This mode will continue until a point outside the display area is selected.

The paint mode provides the creator with maximum self-expression, and is used when none of the other draw subcommands can create the desired shape or form. "Painting" takes a little practice to get used to, but once learned, becomes a very powerful tool. Besides animation, "painting" may also be used to create exciting modern art.

## Pascal Compiler "Test Copies"

Rational Data Systems announced recently "Evaluation Releases" of its Pascal compilers for the full line of Data General computers.

For a service charge, Rational Data Systems will supply a Programmer's Manual and a Pascal compiler and runtime system tailored to the customer's specific configuration, along with a license to use the materials for 60 days.

There are two versions available, one for Data General's AOS operating system, the other for the RDOS and DOS operating systems.

Those interested should first request a 'Purchasing Packet' which contains the ordering instructions and appropriate agreements from Rational Data Systems, 245 West 55th Street NYC 10019; (212) 757-0011.

## 5th Faire Registration Lower than 4th Faire — Given Inflation

On-site registration for the 5th Computer Faire will be \$10.

(Some computer stores, and computer and electronics organizations may be offering discounts on preregistrations they are handling. Last year, the Computer Faire publicly stated a prereg price that was \$2 below the on-site fee. However, it turns out that this is prohibited by Federal Trade Commission regulations — it's price-fixing. So, this year, most stores are charging most or all of the full on-site fee. Don't you appreciate the protection therefor offered you by the FTC?)

Hold on, there! Last year, the reg fee for the 4th Faire was only \$9, on site. This year, it's \$10. How's that 'lower'?

True. But, the government has printed so much money in the past year, unbacked by anything of value (i.e. goods or services), that our inflation rate was around 13%. Since a \$9-to-\$10 increase is only 11%, the 5th Faire reg fee is 2% lower than it was last year in real cost. Or, at least, that's how we see it in our purchasing power (e.g., in the past year, our printing costs, alone, have increased almost 18%).

### Conference Session

## A Touching Communication

The Versatile Portable Speech Prosthesis (VPSP) is an on-going project to develop a wheelchair-portable speech synthesis system capable of unlimited vocabulary and message construction, and designed to simplify message construction for the user. This simplification was achieved via two methodologies. Linguistic analyses of language structure were used so as to limit the number of items the user must chose from at any point in the message construction process. Limiting list size will reduce ssearch time for humans as well as computers. Additionally, a single sswitch (1 bit) user input requires that the system automatically present the user with successive alternatives until the user uses the switch to say "yes" to one of the alternatives. The fewer alternatives, the faster, on the average, the system will arrive at the item the user wants. To this end, rules of syntactic and graphophonotactic constraints on choices for selections were incorporated into the system logic. Linguistic human factors' experiments were also conducted to determine which of several alternative design principles produce the fastest visual search times for words and for letters used in message construction.

Carol Simpson, a major developer of VPSP will present in her Computer Faire talk ("Alphabetical Versus Graphotactic CRT Page Layout of Letters for a Versatile Portable Speech Prosthesis (VPSP)") results of a linguistic human-factors study of alternative layouts for CRT menu pages, and will discuss application of the results to the design of single-switch communication aids.

Carol notes, "The VPSP is a working prototype that is at this time being used to collect data essential to improving the human factors of its design. The present system has demonstrated feasibility. The current phase of the project is a comparative evaluation of alternative design principles with actual users."

"One dinosaur's Jacuzzi is another dinosaur's tarpit." —Butler Lampson, Xerox PARC

## NORTH STAR PROGRAMS

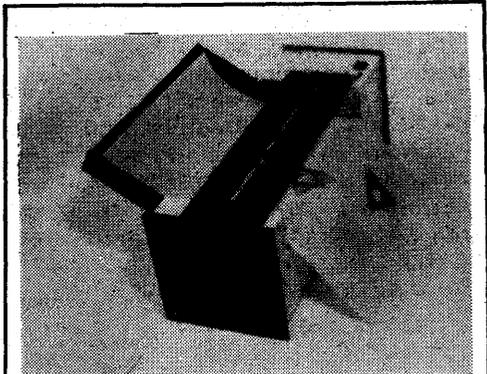
* TIME SERIES SYSTEM	\$125
* PRETTY PRINTER	\$25
* CROSS REFERENCE	\$25
* N. S. TO CBASIC	\$120
* UNIVERSAL DISK DUMP Dumps Basic, Pascal & CPM files & directories.	\$20
* DISK REPAIR Find & repair bad records.	\$20
* UNIVERSAL MENU	\$10
* DIRECTORY UTILITIES	\$20
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**MICRO ARCHITECT**  
96 Dothan Street, Arlington, MA 02174



Mauro Engineering introduces a price-performance breakthrough in multi-format digital plotters. The MP-250 pen Plotter plots on standard 8 1/2"x11" and 11"x17" paper or 11" wide continuous roll paper at speeds to 2.5" per second and .005" resolution. It is priced at \$650.00 in single units. Standard machine uses one parallel output port and comes with full vector software for 8080, 6502, and 6800. Interfaces available for TRS-80, Apple, and serial data ports. Contact Mauro Engineering, Route 1, Box 133, Mt. Shasta, CA 96067 (916) 926-4406.

# HEATHKIT™

computers and Zenith Data Systems are covered every month in Buss: The Independent Newsletter of Heath Co. Computers. The November issue featured a report on the firm's plans for the 80s. Highlights included the future of the H8, the software situation, and a half dozen products planned for the new decade. In December Buss continued its coverage of 32K and 64K dynamic RAM for the H8. The January issue carries news of an H89 modification to allow use of the CP/M 1.4 disk operating system.

Buss has been published since April 1977. It emphasizes candid accounts of the experiences of its 2500 subscribers. Compatible hardware and software from all vendors is featured. Buss is mailed first class. You have the choice of starting with the latest issue or available back issues (about 10). U.S. prices: 12 issues for \$9.97; 18 for \$14.50; 24 issues for \$17.75. Buss, 325-G Pennsylvania Ave., S.E., Washington, DC 20003.

## Conference Session

## Drive Standard, And Leave the Busing Compatible

The personal or home computer has often been mentioned in conjunction with the concept of overall management of home environmental control and monitoring systems, home entertainment, and information systems. One of the factors inhibiting wide acceptance and realization of this concept is the fact that connecting to control and monitoring points of the home environmental systems is a complicated and costly process.

"The concept of the Home Bus Standards Association provides an optimum approach to eliminating the economic and organizational inhibiting factors," says Robert Richardson, SRI International Consumer Electronics Department Director.

Robert, who will be speaking on "Home Bus Standards Association, What is it and What does it Mean?" at the Computer Faire, adds, "The Home Bus Standards Association (HBSA) is a non-profit (IRS501C3) membership organization for the purpose of establishing a widely accepted set of communication protocols, allowing all household electrical devices to interact as parts of a modular intelligent network, using powerline carrier digital packet radio transmissions.

"The consumer benefits of a Home Bus system include direct savings from reduced energy consumption, improved personal safety, and the convenience of remote and automatic control and monitoring of every system in the home. These benefits can be provided at little or no additional cost to the consumer, due to the recent advances in microelectronic technology combined with high volume production of standardized "Bus Compatible" components suitable for use in a broad variety of applications.

"HBSA's objectives are to serve as a neutral focal point for development of an industry-wide monitoring and control signal language, and to provide fundamental public education informing consumers about the advantages of having Home Bus-type technology.

"HBSA is needed because no current organization covers the diverse spectrum of products potentially benefitting from bus compatibility: appliances, heating and air conditioning equipment, home entertainment devices, utility meters, the telephone, lights, locks, alarms, and so on.

"Through HBSA, the central nervous system of the computerized home of the future can be quickly defined, thereby facilitating the linkage of advanced technology's capabilities with immediate public needs."

## Reliable Rumor:

Ralph Ungerman — an early axee by Exxon from Zilog — and Charlie Bass — a later leaver from Zilog, have joined forces and are pursuing a new (unpublished) adventure. Watch for their resurfacing at some new location in the Great Western Computer Puddle.

## What's in a Name?

A normally unreliable source reports that before Fairchild Camera and Instrument's recent takeover by Schlumberger, the company was considering a merger with Honeywell Information Systems. Negotiators had major difficulties, however, in agreeing on a name for the new company. "Fairchild Camera & Information Systems" didn't quite hack it; neither did "Honeywell-Fairchild Information, Camera & Instruments." Negotiators finally compromised with "Fairwell Honeychild Corporation."

## A Soft Listing Isn't Hard to Find

A new mail-order catalogue devoted exclusively to educational software for personal computers is being published by Queue Company.

The catalogue will contain educational software listings from numerous publishers. Software listings will be organized by educational level and field, and by computer, and will be included for all popular personal computers, the company stated.

All software listed can be ordered directly from Queue.

Contact Monica Kantrowitz, President, Queue, 5 Chapel Hill Drive, Fairfield, CT 06432; (203) 372-6761.

## Conference Session

## CAI Helps Uncap The Handicapped

Early in the formal study of Special Education, teachers and researchers recognized the importance and effectiveness of individualized instruction for handicapped learners. There is typically such a wide range of intellectual experience among handicapped students that group-based instruction is not effective. Many persons have long felt that the computer held a special promise in dealing with these individualized instruction needs. However, they also recognized the special communication problems associated with providing CAI to handicapped learners. This is particularly true with moderately, mentally retarded learners who have little or no reading skills.

Utah State University Exceptional Child Center administrator Ron Thorkildsen discusses the importance and need for individualized instruction for handicapped individuals, and how CAI can influence this need in his Computer Faire talk, "Microcomputer/Videodisc CAI: Fulfilling a Promise for Handicapped Students." Ron's talk is based on a research project being conducted at Utah State University's Exceptional Child Center. The major goal of the project is to develop a CAI system utilizing a microcomputer-controlled videodisc to present CAI to mentally handicapped non-readers. The project is in its second year, with one CAI program field-tested, and three more CAI programs under development.

## Printer, with Justification, Characterized as Intelligent

The HY-Q 1000 (trademark), an "intelligent printer" that offers new possibilities for the use of personal computers for business applications, was recently announced by Xymec, a newly-formed manufacturer of microcomputer peripherals.

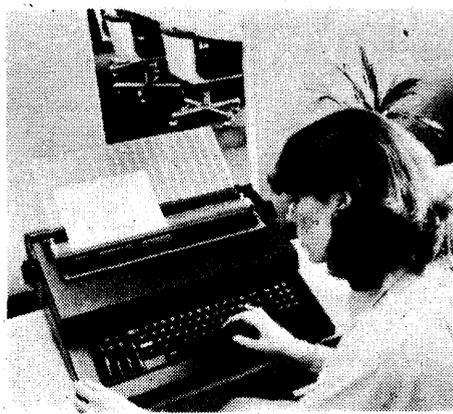
With its five built-in microprocessor, Xymec's HY-Q 1000 — a low-cost, letter-quality, daisy-wheel printer — eliminates the need for complex personal-computer software. Now microcomputer owners can plug any personal (or other) computer into a HY-Q 1000, which will automatically convert simple codes into instructions for right justification, proportional spacing, automatic tabbing, bold and underlined letters, automatic columns, automatic title centering, automatic decimal point location, and other commonly-used text formatting functions.

The HY-Q 1000 has many other advanced features, including "Quadra-Pitch" (trademark), (10, 12, or 15 characters per inch, or proportional spacing); up to 198 characters per line; 100 printable characters in five languages (English, Italian, Spanish, French, and German, available without changing the daisy wheel); and a choice of 21 different typestyles in five different colors. Another unique feature is "reverse printing" — white characters on a black background — which is useful for highlighting critical information on management reports, for example.

## ELECTRONIC TYPEWRITER, TOO

The HY-Q 1000 can also function as a highly versatile, electronic typewriter. The typewriter, made by Olivetti Corporation, also provides a 224-character, two-line memory (allowing a typist to correct any character in the last two lines in seconds); a 1024-character, non-volatile memory for often-used phrases, margins, and tabs; automatic, paper positioning; electronic margin reset; and a digital readout to show column position, and lines to end of page.

According to Shelly Howard, president of Xymec, "The HY-Q 1000 has



more features than any other printer, regardless of price. It allows any personal computer owner, for the first time, to have sophisticated, high-quality, text printout without the complex, expensive, and memory-consuming text editing software they've needed in the past. This opens up exciting, new, word processing and other business applications markets for dealers, OEMs, and systems houses."

Xymec also plans to offer an optional RS-232 serial port this Spring, so the HHY-Q 1000 will also function as a smart terminal.

Xymec is a subsidiary of Litronic Industries, a leading electronics sub-assembly manufacturing company. Xymec was formed on August 15, 1979, as a microcomputer peripherals company. Litronic Industries is presently con-

## Conference Session

## Deleting Secret Terrors About Computers

"Today you can have in your own hands the same amount of computer power that only a few years ago was reserved to the large corporations and to governments. You can buy it for the price of a household appliance, a color tv, or, if you get fancy, a car," says Nicholas Rosa.

In his talk, "Beginners, Gather 'Round, or Welcome to the Small Computer Revolution," at the Computer Faire, Nicholas answers basic questions about computers. "Somewhere each of you has a bottom-line question about computers. The answer to everybody's question is a qualified 'yes'.

"It's a qualified 'yes' because the computer cannot do anything for you all by itself. You will do whatever it is you hope the computer will do. You will work all the miracles. The computer is only your tool. In order to make it work its magic for you, you will have to understand the tool. You will have to learn how to use it.

"That may sound discouraging. The very word, 'computer', already sounds so technical, so forbidding. Could you really learn to use this tool? The answer is 'yes.' You already use countless tools. You use pencils, you use sewing needles. You use typewriters and sewing machines. You run dishwashers and clothes washers and ovens-with-timers. You drive a car. Using each of these tools requires a certain amount of skill. You have learned that skill.

"Even so, you may be holding onto a secret terror about computers. Everybody in modern American society is a little paranoid about computers. We all remember HAL from 2001. HAL was as smart as the astronauts aboard, but tricky, sinister. Evil. HAL fits our deep-down notions about computers. We all know that there's a computer somewhere watching us. Several computers. Lord knows how many computers. The IRS has got one (several BIG ones). The Telecredit network has got one. Your bank has got one. All those computers are tigers, waiting out there in the dark.

"Your personal computer will be a pussycat. Your pussycat. And some day — perhaps sooner than we can imagine — an army of personal pussycats may put those tigers to rout. For one thing, your personal computer is going to help you become computer-wise. That is going to make a difference. Out there."

## Illegal

Doug Ross reports that he has a chess program that beat him . . . by castling after moving its king.

structing a 45,000 square-foot manufacturing facility in Red Hill Industrial Park, Irvine, California, scheduled for Spring, 1980, completion.

Xymec's management team includes Shelly Howard, its president, an innovator in the microcomputer industry. He was previously founder and president of Micro Computer Devices, Inc., manufacturers of Selectra-print typewriter-based printers.

For further information, contact: Xymec, 17791 Skypark Circle, H, Irvine CA 92714; 714-557-8501.

## Conference Session

## A New Slant For Tilting the Odds In the Investment Game

During the past several years, considerable effort has gone into researching methods of tilting the odds in the investment game. Out of this has come the discovery that not only can the odds be tilted, but that they can be tilted drastically, and in either direction. In particular, the strategy of hedging listed options against common stocks, when properly applied, can be proven to be more conservative and more consistently profitable than the simple buying and selling of stocks; so much so in fact that the Securities and Exchange Commission has recently ruled it a legal operation for trust and pension funds. The idea of an investment being more conservative and at the same time more profitable of course violates one of the widely 'known' tenets of Wall St. However, in recent times much that was widely 'known' has been found to be wrong.

The only disadvantage of this strategy is its complexity. Since certain tactics, by their very nature, tend to shift the odds in your favor, while other tactics, by their nature, make it almost impossible not to lose, there is really no viable alternative to a large initial investment in self-education plus a continuing expenditure of time and effort.

### BEGETTING MONEY

Several years ago, Dr Alfred Adler (whose talk at the Computer Faire is "Four Programs for Use with Listed Option and Common Stock Investment Strategies"), asked himself the following question: How can money be used to make more money, without becoming involved in a product or a service? By this he meant consistent, long-term income, not sporadic profits interspersed with long periods of loss. The main thrust of his effort in attempting to answer this question has been directed toward the security markets.

The author's interest in stock market operations is primarily from the point of view of a mathematician. He firmly believes that the market is inherently unpredictable and that strategies based on hedging and the mathematics of probability are far more likely to be successful than those based on 'fundamentals,' 'technical factors,' or the reading of tea leaves. The ongoing study of investment strategies has included a series of computer programs which were written primarily for study purposes. The more useful of those have evolved into production programs which are used in the everyday management of investments. The programs were originally developed in PolyMorphic Basic, and have recently been revised and converted to North Star Basic. These are available from the author and a TRS-80 16K Level II version is available from Creative Computing Software.

The four programs to be presented are designed to be used in the real world, and include the effects of commissions, margin interest, and dividends, where applicable. The first presents the important indices for both opening and closing call-option transactions, including hedge ratios from zero to infinity, not

## Conference Session

## Making Computers Read and Speak

Limited font, optical character recognition, and limited vocabulary speech response have been in office use for some time. By incorporating artificial intelligence (sophisticated programming that emulates simple human thought processes) two new technologies have been developed — omni-font OCR, and unlimited vocabulary synthetic speech.

Art Derfall of Kurzweil Computer Products, will speak at the Computer Faire about these two new technologies: their unique applications to system input and output, and how his company combined the two into one system, producing the Kurzweil Reading Machine for the blind.

## Conference Session

## Computer Games in Education

Fewer than 30% of the pioneers that set off from Independence, Missouri, ever made it to the west coast during the years 1840 to 1870.

Using the computer game, "Oregon Trail," players have the opportunity to re-create that six-month journey, and face some of the problems and decisions that were crucial to safe passage for the first pioneers. (There are attacks from wild animals and bandits; your wagon can get swamped, break a wheel or even have a fire; your oxen can get injured or wander off; in the mountains, heavy rains, snow and impassable trails are constant hazards; illness and injuries are always a threat; and provisions and supplies must be maintained throughout the journey.)

Dave Ahl, publisher of Creative Computing, will speak at the Computer Faire about the latest generation of computer games that educators are finding effective as teaching tools (in first grade through adult education) in such subject matter as: economics, industrial development, pollution, science, language arts, mathematics, geology, business, and medicine.

Punched cards are homage to the Holy Hollerith (holey Hollerith?).

inclusive. Another presents a graph or a table, as the user chooses, of profit from any combination of six basic positions: long or short a stock, long or short a call, and long or short a put. The third program enables the user to predict the future price of an option at user chosen future times based on user chosen future stock prices. The output may be displayed as either a chart giving future prices of options with three different exercise prices at three expiration dates, or a graph giving the future price of one option over a range of user chosen future stock prices. Finally, the fourth program enables the user to determine on an item by item basis the cost, current value per share, total current value, and capital gain of a portfolio consisting of long and short stock, and long and short option positions.

## Conference Session

## SOFTDOC Proposed to Stimulate Health Care Computer Applications

"Although computers have been utilized for health care applications for two decades, for a number of reasons widespread acceptance among clinicians has been disappointingly slow," says James Gagne. "The introduction of new microcomputer hardware, though clearly capable of supporting sophisticated medical applications, is not likely by itself to lead to a surge of medical computing.

"The primary problem has been the indiscriminate throwing of masses of computer technology and software at a medical problem by those without an intimate understanding of the clinical process. By contrast, successful medical applications are most likely to stem directly from health professionals who have an interest in computing and who are willing to share their products with others.

"Datamed Research is announcing the formation of SOFTDOC, a medical software exchange club. Interested physicians and other health professionals are invited to donate CP/M-compatible or UCSD Pascal source-code medical programs on 8-inch, flexible disks, in return for a free disk volume full of such donated software. Others will be charged a minimal fee (\$15) per disk. Additional services related to medical software, such as compilations of user evaluations of commercial products, will also be offered."

James' talk evaluates the history of medical computing, discusses the problems of the past, and offers suggestions for the creations of successful medical software.

"Everything is just an extended triviality." — Ross

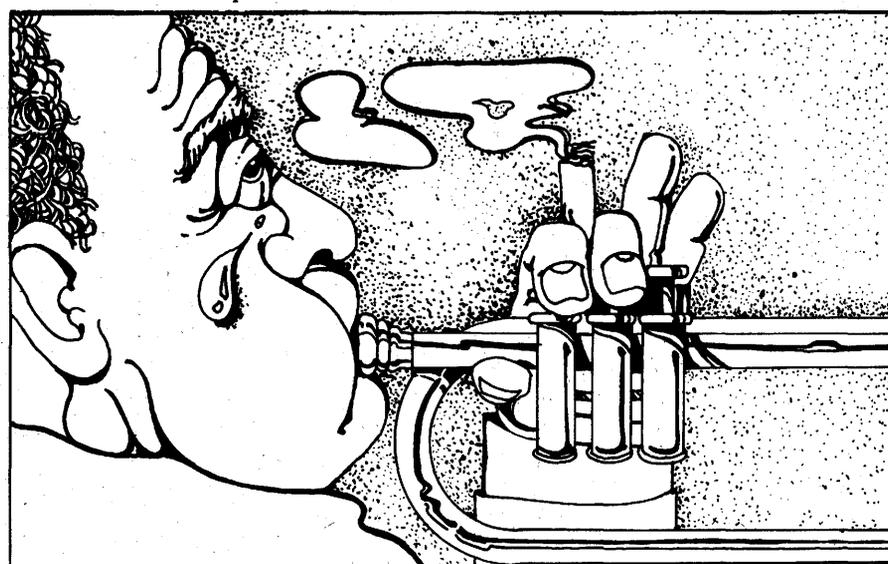
## Conference Session

## Telecommuting: Busing at Home

In 1973, an interdisciplinary research team at the University of Southern California began a study of the technological feasibility and societal impacts of a concept called "telecommuting." This coined word refers to the use of telecommunications and computer technologies to serve as a partial or total substitute for the daily trip to work. At the time the study was performed, personal computers did not exist. The technology that they were concerned with at the time was generally that of mini computers and larger systems. The subsequent introduction of the concept of distributed processing and of personal computer technology, as well as the appearance of several other trends, such as continued threats of major reductions in the availability of petroleum in the U.S., make it appropriate to reexamine the issue of telecommuting in the light of contemporary conditions.

Jack Nilles, University of Southern California Interdisciplinary Programs' Director, makes such a reexamination in his talk, "Telecommuting via the Personal Computer", at the Computer Faire.

"Several major factors and trends in contemporary society are acting to continually increase the desirability of telecommuting for several types of workers," says Jack. "The fundamental issue concerns the relative advantages to the employer and the employee of telecommuting instead of the traditional way of getting to work. Unless there are clear advantages to both employer and employee, the general concept will not be successful. Secondly, if telecommuting becomes more widespread than it is today, there are some broad-scale societal impacts which must also be considered."



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\*TRS-80 is a registered trade mark of Radio Shack, a division of Tandy Corp.

## Be Prepared . . . and Save Money

Carl Dick offered a good suggestion for Faire goers:

A considerable number of the exhibitors — dealers and manufacturers — will be offering special Faire discounts on their products purchased at the Faire (if you haul it away, then they don't have to, saving them effort and expense).

Remembering that out-of-state checks are generally unacceptable, and credit cards with a \$500 charge limit (on which travel expenses have often already been charged) are generally insufficient for potent processor purchases, Carl suggested that you bring an ample supply of travelers checks, or cash (for those who wish to live dangerously) . . . or maybe gold bullion?

Conference Session

## Auntsy Has a Niece: Micro COBOL

A compiler-interpreter for a subset of ANSI COBOL has been implemented on an 8080 or Z80 under the CP/M operating system. The implementation provides all nucleus level constructs and file options from ANSI COBOL. The language was implemented through a compiler and run-time package which can be executed in 20K bytes of main memory. A program consisting of 8K bytes of intermediate code can be supported on this size machine. The programs that make up the compiler and run-time package require 50K bytes of disk storage.

The NPS MICRO-COBOL compiler/interpreter is the result of thesis research at the Naval Postgraduate School that commenced in 1976 to demonstrate that it was feasible to implement a COBOL compiler on a microcomputer.

NPS MICRO-COBOL is the subject of a Computer Faire talk by Lieutenant Mark Moranville of the Naval Postgraduate School. Mark notes that, "The original design was based on HYPO-COBOL which is a Department of Navy approved subset of COBOL, designed to place minimal requirements on a system for compiler support. The definition of HYPO-COBOL was prompted by the need for a small-scale package that could exist in a microcomputer environment. The problem with using one of the existing COBOL-level specifications was that the level structure was oriented toward batch environments on systems of various sizes, permitting COBOL implementations of various degrees of sophistication. Many of the features supported by even the lowest levels of COBOL are not applicable to an interactive, single-user system such as CP/M. Additionally, the COBOL language being highly verbose makes high demands on systems with regard to parsing time and storage space. MICRO-COBOL was designed to reduce the size of the compiler, and to eliminate functional redundancy provided by multiple options in the language statements. It should be noted that MICRO-COBOL is a proper subset of ANSI COBOL."

Conference Session

## KYDE TYME Provides An Apple For the Teacher

The KYDE TYME Project in the San Juan Unified School District in Sacramento, California, and the CHIPS Project at California School for the Deaf in Berkeley, California, are funded to develop a computer-assisted instruction author language for the microcomputer. The language is to be easily usable by the "novice" teacher in CAI. The authoring system necessitates no programming expertise on the part of the teacher and literally walks the authoring teacher a step at a time through building a student curriculum, and the authoring system makes full use of the graphic capabilities of the Apple computer.

The "author language" is complete and running, and Ted Perry of the KYDE TYME Project will describe and demonstrate it at the Computer Faire. Included in the author language program are: teacher authoring program, student presentation program, graphics development program, graphics library program, and data management program.

Overheard at U.C. -Santa Cruz's Summer Computer Science Institute:  
"rubber ducky arrays." (undoubtedly a political data structure)

Conference Session

## Individualized Instruction in Computer Programming

Individualized instruction is a process based on the premise that a student, given sufficient time and the availability of adequate human and educational resources, can master a given segment of instruction to meet an objective that has been specified in advance. Individualization recognizes that different students learn at different rates and in different ways, and that instructors are as varied as the students they teach. In an individualized course the instructor is a facilitator and a resource person, providing supplemental assistance through tutoring sessions, small groups, on-the-spot answers to questions, selection of additional media, and development of innovative learning activities to extend the traditional functions of teaching and administration.

In a talk at the Computer Faire, Carl Grame and Dan O'Donnell will describe how courses in FORTRAN, BASIC, and IBM 370 assembly language are conducted on an individualized basis at De Anza College, Cupertino, California, where they are instructors. Since FORTRAN is their most completely developed course, they use a detailed description of it as representative of all three courses. The individualized approach, which includes audio tapes, uses a variety of teaching styles and accommodates a variety of student learning styles.

## DISTRIBUTE FREE GAZETTES TO FRIENDS & ASSOCIATES

The Computer Faire would be pleased to ship you any reasonable quantity of *Gazettes* you wish to request, for distribution to your friends, professional associates, and fellow employees. These are available without cost; the Faire will pay all charges, including UPS shipping fees.

Just write or call and tell us (1) how many you wish to receive, and (2) where to ship 'em (it must be a street address: UPS is prohibited from delivering to a P.O. Box).

Typically, a *Gazette* will include a variety of information of general interest, as well as — of course — all the details of the forthcoming West Coast Computer Faire. Call or write:

Computer Faire  
333 Swett Road  
Woodside, CA 94062  
(415) 851-7075

A piece of cake

In Cobol, please note that  
DIVIDE CAKE INTO 3 yields 3/  
CAKE, rather than CAKE/3.

Conference Session

## InGROWn Knowledge: A CAI OutGROWth

The teaching machine has characterized much of computer-assisted instruction in the past years: students are presented with "frames" or questions, and must provide short answers to proceed. This style of learning can be slow and uninteresting, especially as the subject matter and the method of presentation is fixed. In order to provide a richer CAI environment, a group of educators and computer scientists have developed the GROW system, in which the knowledge stored in the computer is mutable, and reflects opinions of students as well as those of teachers. Also, the GROW system allows CAI programs to be both written and used in a variety of styles and formats.

"CAI: A Different Way," is the topic of a Computer Faire talk by Jeff Levinsky of Computer Systems Design Group.

"GROW," says Jeff "is an attempt to apply non-traditional solutions to some of the traditional problems of CAI. To counter the sterile and passive nature of many CAI presentations, GROW incorporates several basic motivational techniques and allows for creative flexibility. This includes having the student participate in an active role, having 'knowledge' be mutable and controversial, and having evaluations be carried out by other individuals rather than by machines. With GROW, the computer need not play the role of teacher but can instead be viewed only as a tool for learning and for reference. And the variety of presentation styles and the subjectivity of the communication permits GROW to be used in educational disciplines in which CAI has been typically ignored. Finally, GROW is designed for many levels of users: beginners need not know even that the system is extendable, while advanced users can develop nodes and systems of nodes using the powerful tools and languages available."

Conference Session

## The Computer is In

"We are at the beginning of a decade which will see computers enter most phases of our daily lives. Inexpensive and easy-to-program 'appliance' computers are now available for small business and home use. There are many possibilities for their application in the medical office."

Dr Mark Spohr of Medsoft relates several applications in his talk, "The Computer in the Practice of Medicine: an Overview," at the Computer Faire.

The computer's skills, says Mark, "lie in the areas of data collection, storage and manipulation. It performs repetitious and tedious tasks without tiring. Computers offer physicians increased organization, efficiency, and productivity. Better management improves the quality of patient care, and reduces medical costs.

"Estimates of physician time spent on maintaining medical records range from 25% to 35%. Administrative functions occupy yet more time. These tasks are necessary. By performing them more efficiently, they require less time. This allows more time for patient care. Quality of patient care increases, while record keeping, administration and management costs decrease.

"The large data storage and manipulation capabilities of the computer can be used to our advantage in making decisions. Differential diagnosis routines, treatment protocols and drug interactions are potential areas of use. In addition, the interactive capabilities of the computer can make programmed learning a reality for patient and physician."

Please, mention where you saw it, when you respond to an ad in the *Silicon Gulch Gazette*.

Conference Session

## Microcomputers and the Design of Contelligent Systems

Contelligence is the combination of consciousness and intelligence.

"The linking of human biocomputers," says Dean Gengle, "with microcomputers defines a particular system. By virtue of the human side of the linkup, we know that the system possesses contelligence. We have all heard of programs combined with computers that teach various biofeedback methods: alpha/theta production and control; myography; temperature/blood pressure control; etc.

"There are many esoteric traditions which have taught 'altered states of consciousness' methods for spiritual and sometimes 'magickal' reasons. Can any of these methods be augmented through computer/human combinations?"

In his talk at the Computer Faire, Dean will explore some of the possibilities opening up in the age of the personal computer, and will suggest specific experiments that might be undertaken by the individual seeker/scientist.

Conference Session

## A Moving Account of Animation

Motion illusions have fascinated the public at least since 1867 when Milton Bradley patented an animation toy called the Zoetrope of "Wheel of Life." One of the earliest motion picture machines was made by Plateau, a Belgian vision scientist, in 1833. His device, the stroboscope, consists of a sequence of still pictures printed on a disk which are viewed as they spin behind a series of slits. He gave a prototype to a countryman, Quetelet, the founder of statistics, who eventually gave it to Michael Faraday. Shortly thereafter the stroboscope and related animation devices were widely sold as parlor toys for the children of Victorian intellectuals. In the later half of the nineteenth century, the German scientists Helmholtz, Mach, Wundt, and Exner were among the first to make precise measurements of apparent motion. Exner's method was to present two separate successive electric sparks and ask observers to judge the order of presentation. His device is a forerunner of one of the most widely used instruments in vision research, the tachistoscope.

Speaking at the Computer Faire on "Seeing Motion with the Mind's Eye," Sam Hersh will talk of contemporary applications (a smart tachistoscope), demonstrate Phi Phenomena particularly, and more generally will demonstrate that "an extraordinary ability of the mind to see motion where none exists is the basis for animated visual displays. For example, if two neighboring figures are successively flashed, the figures appear to move smoothly from one position to the other when the time interval between flashes is between 30 and 200 msec. Many related phenomena can be demonstrated and investigated using an inexpensive video processor instead of standard electromechanical instruments which are less versatile."

"A list is only as strong as its weakest link." —said Don Knuth (without a lisp)

## Wanna Trial Subscription?

The Center for Computer/Law has announced publication of the first annual issue of the *Computer/Law Journal*, a periodical concerned with "Current Developments in Computer Law." This issue contains feature articles on computer contracts, electronic funds transfer, the Ribicoff computer crime bill, and computer-aided legal instruction.

The issue also includes a topical bibliography, containing over 1200 items published in the computer law field during 1978, a summary of all important case decisions reported during 1978, and an extensive reading list on computer law.

The special issue is priced at \$15; subscriptions to the quarterly *Computer/Law Journal* are \$50 per year. Contact *Computer/Law Journal*, 675 South Westmoreland Ave., Los Angeles, CA 90005; (213) 623-3321.

## Teletype is Turtlelike

by Jim C. Warren, Jr.

We have a Teletype Model 40 chain printer, here at the Faire. It has served us well. However, a two-dollar item — the form-feed contact — broke, and we ordered another one, last October.

We received a back-order notice, dated November 9th (that's 1979). Recently, noticing that we were still limping along with kludged, formfeed-less software, we called and asked about the part.

We were told — with no slightest hint that it was extra-ordinary — that the part was scheduled for delivery in August, 1980. Yes, they knew it was crucial for the proper operation of the printer. No, they didn't know if they could ship it earlier — but they'd check and get back to us, immediately.

That was a couple weeks ago, and we have yet to hear anything. Our understanding is that Teletype is still manufacturing Model 40's . . . which require that part. So, apparently, they are reserving all of the parts they manufacture for the new machines — and the people who already have machines can eat cake.

We thought you might be considering purchasing a Model 40, and thus might be interested in our experience. It's great . . . until something breaks. Then, you can call their backorder clerk at (312)982-2132, and see if your machine is going to be usable within the next year or so.

Conference Session

## Is Electronic Technology Making Humankind An Endangered Species?

"We in the 'intelligent machines' industry are unavoidably among the shapers of not only Tomorrow's world, but probably what will become of mankind itself," claims Entecon Corp. president Don Perry Dunlap.

"Perhaps," he continues, "that is important enough for us to pause a moment in our efforts at creating the means of achieving the future and contemplate what we really want the ultimate fruits of our labors to be."

In Don's talk at the Computer Faire, he will present a perspective and a few bases for formulating some choices that may become increasingly significant in guiding the directions of our work and innovations in the future.

Citing a quote from Robert Jastrow in *Time Magazine* ("The computer initiates life like an electronic monkey. As computers get more complex, the information gets better. Finally the line between the original and the copy becomes blurred. In another 15 years or so — we will see the computer as an emergent form of life. Human Evolution is a nearly finished chapter in the history of life — a new species will arise out of man. Only a carbon chemistry chauvinist would assume that the new species must be man's flesh and blood descendants, with brains housed in fragile shells of bone. The new kind of intelligent life is more likely to be made of silicon."), Don states, "It is my intention to challenge Dr. Jastrow's contentions and put them in a broader perspective, not on the grounds of their possibility or even their so confidently prophesied inevitability — I contest them purely on the grounds of their desirability."

## MAILING LIST PROGRAM TO SUPPORT FUTURE PACKAGES

Mail-V is Micro Architect's first package of Series V business software for the TRS-80 DOS system. It can be used with other Series V systems such as WORD-V, which produces personalized letters from mailing list information, and INV-V, which receives name and address information for printing purchase orders.

The screen input and edit features allow the user to move the cursor, to delete a character or a line, or to replace characters by typing over them.

Mail-V includes a report writer, permitting the user to specify the report or to label formats on-line. Selection criteria, field calculations, and multiple-sort keys are supported. One or more labels can be selected across a line.

Fields include new zip code extensions, last reference date, and remark field. A selection code, ranging from 0 to 32,000, is used to classify labels.

Unlike most similar programs, the entire data base does not have to be sorted each time records are added. The entire diskette can be used for storing data, and the entire file can be sorted in minutes instead of in hours. An advanced sorting algorithm has been implemented, and a separate module to handle sorting numeric zip codes is provided. Any fields can be sorted or searched, the company says.

TRS-80, DOS, and 32K memory are required. Mail-V is priced at \$59, includes full documentation, and is delivered on diskette; the manual alone costs \$5. A CP/M version will soon be available.

Contact Micro Architect, 96 Dothan St., Arlington, MA 02174.

## TRS-80 BASIC Manual on its Way

Owners of the powerful, friendly TRS-80 have been waiting for an equally powerful and friendly book to help them make the most of their computers. And in April, 1980, they'll get it.

Bob Albrecht, Don Inman, and Ramon Zamora have just finished *TRS-80 BASIC*, a Wiley Self-Teaching Guide. The *TRS-80 Monthly News Magazine* called an advance copy "outstanding...the best thing to happen to Level II owners."

The guide teaches readers step-by-step to read, write, and program in BASIC on the Level II TRS-80. Packed with games, graphics, learning tools, and home management applications, it can help both beginners and experienced programmers gain maximum enjoyment and use from their TRS-80s.

Bob, Don, and Ramon are all associated with Dymax Corporation of Menlo Park, California. The authors and consultants are editors of *Recreational Computing*. Bob has been lead author (with LeRoy Finkel and Jerald Brown) of three other Wiley Self-Teaching Guides: *BASIC, 2nd ed.*, *BASIC for Home Computers*, and *ATARI BASIC*.

For more information, contact: John Wiley & Sons, Inc., 605 Third Avenue, New York NY 10016; (212)867-9800.

## Real-Time Real Estate

Redam-III, a new disk-based system for the PolyMorphic Systems 8813, is intended for use by brokers. The system comes on three disks, stores listings for homes and buildings, and performs 25 analysis routines, including RPA, a residential property analysis; CPA, a commercial property analysis; and CML, a client mail list. The packages may be purchased separately on diskette.

Contact Micro-Systems Design, 1114 State Street, Santa Barbara, CA 93101; (805) 965-0385.

## Support Your Local CP/M

Lifeboat Associates is now offering CIS Cobol, a language system especially developed to speed the production of microcomputer applications software packages which require ISAM file management and good screen data handling. The CIS Cobol, distributed under the name "iCIS Cobol" by Intel Corporation for ISIS, is offered by Lifeboat Associates for most popular computers supporting the CP/M operating system or compatible derivatives. It comes in two versions:

- CIS Cobol (standard) — An ANSI '74 Cobol standard compiler, fully validated by U.S. Navy tests to ANSI level 1. It supports many features to level 2, including dynamic loading of Cobol modules and a full ISAM file facility, and includes program segmentation, intractive debug, and powerful interactive extensions to support protected and unprotected CRT screen formatting from Cobol programs used with any dumb terminal. Price: \$850
- CIS Cobol (compact) — A Cobol subset compiler for use on a 32K-byte microcomputer. It contains a valuable range of Cobol language features, many at level 2, and includes ISAM and the CIS Cobol interactive screen formatting of dumb terminals. Price: \$650

Two editors are available for use with CIS Cobol. They are:

- Forms 1 — A CRT screen editor for building application CRT formats with protected and unprotected field areas. The output is Cobol data descriptions for copying into CIS Cobol programs. It eliminates the chore of writing screen input and output descriptions by hand, and greatly speeds interactive applications programming. Output requires CIS Cobol compiler. Price: \$125
- Forms 2 — The Forms 1 screen editor, plus indexed file application program generator. It automatically creates a 'query and update' program of indexed files using CRT protected and unprotected screen format. No programming experience is needed. Output program is directly compiled by either CIS Cobol compiler.

For further information, contact Lifeboat Associates, 2248 Broadway, New York, NY 10024; (212) 580-0082.

## Conference Session

## Cereal Communication Is More Than Snap, Crackle, & Pop

There are two basic modes of Serial Communication that take place in microprocessor systems: asynchronous (unclocked), and synchronous (clocked). Within any given communication network there exists a protocol or set of rules that ensure that data transmitted is received as it was sent.

"In a typical microprocessor system," says Frank Toth of American Microsystems, the data from the microprocessor bus must be converted from a parallel to a serial format through some type of interface device. In simple asynchronous systems, this device is usually an asynchronous receiver and transmitter (UART). In more complex systems using Binary Synchronous Communications (Bi-Sync), a Synchronous Communications Adapter (SCI or UCIA) is utilized to convert parallel microprocessor data to a serial bit stream with a clock. In extremely complex Bit Oriented Protocol (BOP) systems having multipoints of reception/transmission, a complex device such as an Advanced Data Link Controller (ADLC) is used to transfer data from a computer to a remote location."

Frank covers in detail, all these aspects in his presentation, "An Overview of Serial Communications in Microprocessor Systems," at the Computer Faire.

## RUMORS . . .

continued from page 11

operating under the name, 'Thinker-toys' for 11 years (yes, the store carries micro-based gadgets; yes, George knows about it; and, yes, the owner is less than enchanted with George's registration venture).

George told us that he knows the name was used by others long before he decided to try trademarking it — but that he was the first one to put a 'TM' bug on it.

Now, we have no objection to Teletype™ or IBM™ or Frigidare™ being trademarked, for, in each case the original users were the registrants. However, we do question whether George's maneuver fits within the spirit of the trademark concept. (This has nothing whatsoever to do with whether it is legal, for it is well known that swallowing camels and fitting elephants through eyes of needles is standard fare for legal eagles — all too often the carnivores on the skeleton of societal structure.)

If the Trademark & Patent Office sees fit to honor George's application for registration — on the basis of first TM, ignoring first use — then we will consider filing for registration of the following (herewith first TMed): motherboard™, Pie™ (Apple™ is already taken), S-100™ microcomputer™, I™, and George™ Morrow™.

Why — if this really catches on, a whole new generation of intelligent typewriters and typesetters will have to replace current machines — ones that append TM to each word as it is typed. Truly™, George™ may™ create™ a™ booming™ new™ application™ for™ the™ microcomputers.™

## PETPILOT: Animal Talk

Commodore PET owners get full standard PILOT (the popular computer-assisted instruction language) on a minimum-size PET, according to Dave Gomberg of the PETPILOT Project. Dave announced not only a PETPILOT language processor, but also an editor suitable for preparing long programs of up to about 80,000 characters.

The new product features full BASIC in compute statements as well as two new keywords designed to make PILOT programming easier and faster. All language features of the most recent PILOT standard are implemented. In addition, the system has been designed to be easy to learn and use.

Because PET tapes can only move forward, there are limits, depending on memory size, to the distance a PETPILOT program may jump upward, Dave said. Dr. Martin Kamp, an experienced PILOT programmer, described this restriction as "not a barrier to effective use of PETPILOT."

Only the tape drive supplied with the PET is required to run any PETPILOT program. While simple PETPILOT programs can be created on a one-tape PET, authors writing long programs will need the second cassette drive offered by Commodore International (Palo Alto, California), manufacturer of the PET.

The package offered by the PETPILOT Project contains both programs, a sample PETPILOT program, a teacher's manual, a quick reference card, and licenses to run the programs on a single PET. The package costs \$25, including postage and taxes (prepaid only), and can be ordered by specifying the PET serial number to be licensed, to: Dave Gomberg, 7 Gateview Ct, San Francisco CA 94116.

## CP/M Software Support Firming Up

The Small Systems Group, a software consulting firm in Southern California, has just completed a survey of software packages for micro computers using the CP/M operating system. Questionnaires were sent to 84 vendors and data on 264 programs has been received.

The survey contains a general section on topics such as classification, description, price, and number of copies sold as well as a configuration section which covers memory, disk, terminal and printer requirements.

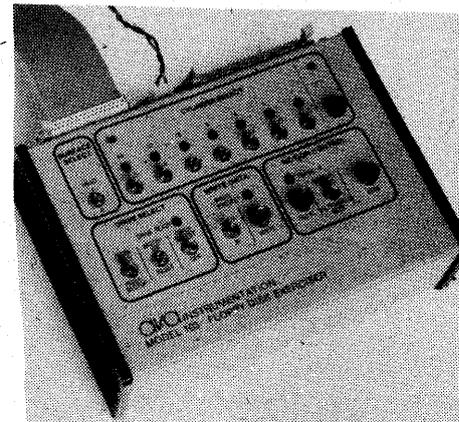
After tabulating the results, it appears that CP/M based micros may be the best supported computers in the world, according to Larry Press, Small Systems Group president. For example, there are 27 text editing or word processing packages available under CP/M and 17 high-level, language processors.

A survey directory has been prepared. It shows all programs classified by type and gives the names and addresses of their vendors. One can read off the vendors of mailing list systems, medical office systems, payroll packages, etc.

For further information, contact Larry Press, Box 5429, Santa Monica CA 90405; (213) 392-1234.

## Disk Exerciser To Jog Your Memory

Ava Instrumentation, Inc. recently announced the Model 103 Floppy Disk Exerciser, claimed to be the first, low-cost, lightweight portable exerciser designed exclusively for floppy disk drives. Both mini-floppy and standard 8" floppy disk drives, whether single or double-sided, single or double density, can be tested and aligned, whether in the



field, the lab, or in incoming inspection.

Its claimed features are: head alignment simplification, index detector adjustment, track 0 adjustment and other normal maintenance procedures; small size (fits in briefcase); compatible with all makes of drives using the standard Shugart interface; two connectors are provided, one 34-pin for mini-floppy drives and one 50-pin for standard 8" floppy drives; no power supplies, the Model 103 uses power from the drive under test; interface cables for either the standard floppy or mini-floppy drives are optional, and may be purchased separately, as the user needs them, power cables are included with the interface cables; manual or alternate seek (with track 0) to any track address, address status LED's verify head positioning; drive status LED's verify current drive status; a pattern of all ones or zeroes can be written from index to index, for single or double density drives; and surface select for double-sided drives.

For information, contact: Ava Instrumentation, 96772 Manzanita Avenue, Ben Lomand CA 95005; 408-336-5048.

## A Case of Apples Gets Carried Away

Computer TEXTile, Inc. recently announced the availability of a rugged, custom-designed, Apple-computer-system, carrying case. The case contains room for an Apple, 9" Sanyo monitor, two disk drives, power strip, two boxes of diskettes, and manuals.

Excellent for the executive who wants to bring his system home in the evenings or on weekends, the case is finished in a black vinyl with metal, reinforced corners. The interior is completely lined with protective, foam rubber covered with black velveteen. The carrying case includes a built-in shelf over the Apple for the monitor and disk drives so the system may be operated in the case. For added convenience, it is not necessary to detach any cabling to pack the system for transport.

The case is designed suitcase-style with the disk drives and monitor sitting beside the Apple. The case measures 30"x21-1/2"x10-3/4", weighs approximately 12 pounds, and costs \$199.

For further information, contact: Computer TEXTile, Inc., 10960 Wilshire Blvd, 1504, Los Angeles CA 90024; 213-477-2196.

## An Exerciser For Slipped Disks

Micro Systems Associates, Inc., has recently introduced DiskTool (tm), a low-cost, software, floppy disk exerciser and repair package targeted for microcomputer retail stores and technically-minded individuals. DiskTool is currently available for Imsai IMDOS (tm) or CP/M (tm) systems using PerSci floppy disk drives. It enables a technician to perform all factory recommended adjustments on PerSci floppy disk drives including those made necessary when the main voice-coil, positioner lamp burns out.

An extra feature of the package is a foolproof adjustment procedure for the IMSAI Programmable Data Separator (PDS) board.

Some of the many DiskTool commands provide facilities for azimuth and track alignment, motor-speed adjustments, and head-load solenoid adjustments.

A demonstration disk and manual are available and versions for other microcomputer systems and floppy disk drives are being developed. For more info, contact: Micro-Systems Associates, Morgantown WV 26505; (304) 291-5180.

## Conference Session

## Courting Legal Protection In The Software Jungle

In Greek mythology there is a detailed account of the god Prometheus, giving the gift of fire to mankind. It was soon after that someone received the first burn. In a similar manner, the computer has proven its utility to humanity in numerous ways. The complex legal problems associated with computer use are now becoming more apparent in both the civil and criminal courts.

The high demand for applications software has resulted in a small army of independent developers and distributors. The computer industry has quickly reached the multi-million dollar stage. A single program can cost anywhere from a few dollars to a hundred thousand dollars depending on its complexity. It comes as no surprise that piracy of software is fast becoming a major concern to software developers who may have invested much time and effort in their creations. The question is not whether any protection exists for software, but which alternative offers the best protection.

As programs with real-life applications proliferate, it is conceivable that lawsuits will be filed against the original software developer for damages or injuries arising from the use of their programs. Unsophisticated consumers should be aware of the simple means they can employ to protect their investment in software when dealing with an independent vendor.

"These are only a few of the problems facing the computer industry today," says attorney Raymond Karch. His talk at the Computer Faire, "The Software Jungle: Legal Pitfalls," deals with some of the legal problems that are commonly encountered by software developers, distributors, and purchasers. Alternative methods of software protection are seen in the context of copyrights, patents, and trade secrets. Potential liability from software use is explored along with means to limit it.

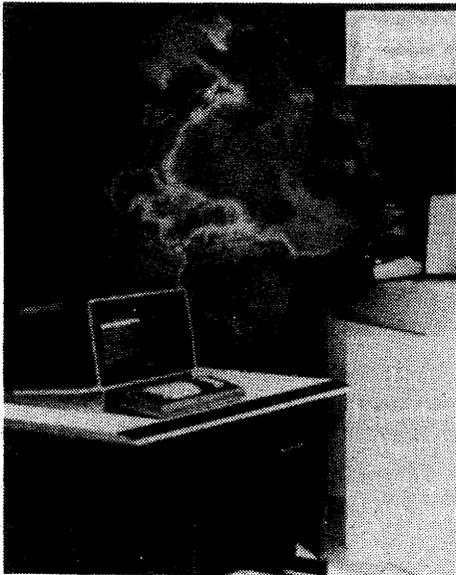
## Cataloging the TRS-80

Radio Shack has issued their TRS-80 Microcomputer Catalog RSC-3, "The Expanding World of TRS-80."

The 24-page, full-color catalog includes complete, up-to-date information on both Model I and Model II TRS-80 Microcomputer Systems.

Also listed in the new catalog are peripherals and accessories such as five line-printers, disk expansion units, a voice synthesizer, system desk, dust covers, carrying cases and software including more than 50 ready-to-run programs.

Detailed specifications shown in the new catalog include a TRS-80



System Selection Guide, comparison charts for Level I and Level II BASIC, a description of disk BASIC and TRSDOS operating systems for Model I, and the Level III BASIC and TRSDOS operating system for Model II.

TRS-80 Microcomputer Catalog RSC-3 is available free on request from participating Radio Shack stores and dealers, and Radio Shack Computer Centers, nationwide.

## Ancy for COBOL?

Ellis Computing has introduced four new Cobol application packages written in the company's Nevada Cobol™, a subset of the ANSI-74 standards. The source code is distributed either on paper listings or on Processor Technology's Helios diskette, and comes with documentation. According to the company, the packages will run with any Cobol compiler. The new packages are:

- **Budget Planning:** A planning aid for new or existing businesses. The Business Plan Generator consists of two Cobol programs, one which is interactive, for easy data collection, and one which prints reports in accounting format. Both are table-driven for ease in changing chart-of-accounts, and cost \$25.
- **Pre-Cobol:** The Cobol preprocessor allows the Cobol programmer to invent his own mnemonics which are translated to standard Cobol reserved or user-words. Old or new programs are margin-aligned and structure-indented for easy reading, modification, or debugging. The preprocessor costs \$25.
- **PFR:** The Personal Financing Report consists of three Cobol programs to record and print personal income and expenditures. The data collection forms and interactive input program are central to the system. The report shows current month,

Conference Session

## Interactive Service Offerings

"Two-way CATV systems have been in existence in this country for at least fifteen years and yet, until recently, there have not been any strong, two-way, interactive service offerings. There have been satellites. First, government satellites, and then commercial satellites. Western Union, RCA, and AT&T operate satellite systems, but there are no two-way interactive programs. There are many new communication media, but they are generally inaccessible for general home or office use. Telephones, telex machines, acoustic couplers, and data access arrangements are most commonly used. What is missing is a universal, home/office terminal device — a low-cost terminal device that would be as prevalent as the telephone, and would have the following capabilities:

"Accept alphabetic input and display, accept numeric input and display, color graphic input and display, motion video input and display, audio input and output, soft-copy storage (i.e., erasable storage such as tape), hard copy output, access to computing power, two-way communication capability (providing audio/video and data communications), ability to translate between audio, video and data."

In summarizing his talk ("The Electronic Sandbox"), to be given at the Computer Faire, San Francisco State University Broadcast & Communication Arts professor Mark Cummings concludes:

"We are entering a period of dynamic change based on technological advances in micro-electronics and communications technologies. The magnitude of these advances has to a large degree unvested the interests that have maintained the status quo, thus creating a plastic environment, an "Electronic Sandbox." This period will be relatively short-lived. Soon new interests will become vested and the patterns built in "sand" will become locked in "concrete." Now is the time for creative play; for experimentation with new alternatives; and for choosing those alternatives which will foster a more humanizing, more socializing and more democratic society."

"Computer science is the only discipline in which we view adding a new wing to a building as being maintenance." — Jim Horning

year-to-date, and average figures, and costs \$25.

- **Labels:** The Cobol program reads a name and address file with three or four line addresses (created with any text editor), and prints cheshire or gummed labels, one-up or four-up; the one-up has an option to stop for envelope feeding. The label program costs \$25.

Contact Ellis Computing, 1480 17th Avenue, San Francisco, CA 94122; (415) 664-1534.

Conference Session

## Eclipse Overshadows Computer Tracking

The February 16, 1980, total, solar eclipse was the object of a combined backpacking and scientific expedition to the highlands of Kenya for *Byte* Publications' editorial director Carl Helmers. The expedition was the brainchild of Norm Whyte, a graduate student at Sonoma State University, California, who is interested in computer-controlled, solar-corona observation. Carl met Norm after writing about the problem of automating eclipse-photography in the July, 1979 issue of *Byte*.

Norm's experiment used a lot of custom mechanical and electronic equipment with infrared film mounted in a magazine back for a Canon 35mm SLR body. Carl's photography was performed using his Nikon 35mm SLR body and motor drive with Ektachrome ASA 200 film in a 250-shot magazine back. Photography was done with a 1000mm reflex telephoto lens. Both sets of equipment were attached to an equatorial telescope mount so that sun-tracking was automatic in an open-loop fashion. Both cameras were controlled by computer systems which generated the exposure timing.

Norm's experiment was controlled by an Apple-II computer with custom interface cards for parallel I/O, and a Mountain Hardware real-time clock. Carl's own eclipse photography was done using a single-card computer. Further investigation finds that the design sketch of last July's *Byte* editorial to be too elaborate. It turns out, says Carl, that all one needs to do is control the pulsewidth of a contact closure in order to control the exposure time. The falling edge of the shutter pulse cues the motor drive to advance to the next frame.

Carl promises that his talk at the Computer Faire will be profusely illustrated with photographs from the trip, in conjunction with commentaries about the systems involved.

## Custom Letters: An Exact Correspondence

Structured Systems Group has released Letterright, an office correspondence software package which allows the user to customize each letter to the recipient. The system can read names and addresses from any SSG NAD Name and Address file, and can write those names and addresses into the document where specified.

The system's use of substitution values allows the user to create form letters or standard documents; the text closes in around the substitution value automatically. According to a spokesman for the company, the handling of responses to routine requests would be one typical application of the system. The operator would call up the document, key in the substitution value for the individual inquiry, and print the letter; depending upon the type of printer used, the letter would appear to have been hand-typed.

## WANT ADS

**Industrial quality disc-based computer system.** DTC Microfile, 8080 processor with 48K memory, full Microsoft Disc Basic, floppy disc operating system, dual 8" Persci floppy disc drives. Used for Computer Faire files for two years, until we outgrew it. Will sell for \$4800, F. O. B. Woodside, CA. Contact Computer Faire at (415)851-7075.

**Six 16K Dynabyte RAM boards, any or all at \$250 each.** Jim at (415)851-7075.

**Genuine, antique 8K PDP-8/I with quad DEctapes and papertape punch.** Fully functional; in two 6' instrument racks on casters; runs OS/8, DIBOL, etc. — 15 years of systems and applications software available; includes manuals, DEctapes, schematics. \$3800, F. O. B. Sunnyvale, CA. Call Jim at (415)851-7664.

If you feel that you and your tax dollars have been treated fairly or unfairly by the UCSD Pascal Project, please send your comments to Jim Warren, 345 Swett Rd., Woodside CA 94062. If you were an industry or OEM user of UCSD Pascal, you may wish to copy your comments to the Microcomputer Industry Trade Association, c/o Jim Edlin, Secretary, 380 Mountain Home Rd., Woodside CA 94062.

**Wanted: Used CDC Hawk, 10MB hard-disc drive with a 3M interface.** Contact Wireless Digital at (415)851-7077.

For the first time in the U.S.: **The Japan Microcomputer Club will exhibit** their work and projects at the West Coast Computer Faire. Don't miss it.

Subscribe to the **only fast-turnaround microcomputing news medium: InfoWorld**, the biweekly newspaper for the micro community. \$18/26 issues throughout the U.S. InfoWorld, 530 Lytton, Palo Alto CA 94301. Visa and MasterCard accepted.

About 60 cancelled and uncanceled **Czech stamps** were taken in trade for a subscription to the old *Intelligent Machines Journal* (newly transformed into *InfoWorld*) — the subscriber couldn't get U.S. dollars out of Czechoslovakia. These include a number of astronaut/cosmonaut/space stamps, as well as the more usual horses and castles. \$35 for all of 'em. Jim, (415)-851-7075.

[Huh?] **Used (=inexpensive) redwood water tanks wanted.** Contact Jim at (415)851-7664. Also sought: **redwood planking and solar heating equipment.**

If the porkbarrelers would stop deflating dollars, we would stop increasing Computer Faire fees (we increased 11%; the economy inflated 13%; thus, the 5th Faire is 2% less expensive than the 4th Faire. Aren't we good folks?).

**Decreasing dollars!** Tired of rampant inflation? Let's tell our congresspeople to stop creating money underived from products or services. (In fairness, we must also tell them that we are willing to — and wish to — accept less from the government. *Please Uncle, I'd rather do it myself!*)

The user can choose a 'fast path' to generate a single document, or can add to the catalogue of documents ready for modification and re-use, which is stored on a floppy disk. Paragraph indentations and line width are easily set or changed, according to the company. The screen-oriented entry module features backspace, cursor up and down, erase a character/line, scroll up/down, and move-line/move-block capabilities.

Letterright is fully menu-driven, and is documented in a 53-page user's manual. The system requires a CP/M-based microcomputer with 48K RAM, at least one disk drive, a printer that can skip to top of form, and an 80 x 24 CRT with cursor addressing. The package is available nationally through computer retailers, including ComputerLand.

Contact Structured Systems Group, 5204 Claremont Avenue, Oakland, CA 94618.

## Conference Session

**Computer-Assisted,  
Astronomical Self-Identity:  
Aries Finds Itself in RAM**

The amateur astronomer's main activity at the telescope is to seek out and identify numerous celestial objects within the limitations of his optical (or radio) equipment and of existing "seeing" conditions. Objects are found by their celestial coordinates (right-ascension: equivalent to longitude, declination: equivalent to latitude). These data are listed in many standard reference works, and, of course, designate an enormous number of stars, double stars, clusters, cluster galaxies, etc.

Dark-adaptation of vision is a sine-qua-non for most effective use of the telescope, and the necessity to illuminate and leaf through pages of hard copy is a tedious and time-consuming chore. The microcomputer CRT set up on or adjacent to an observation deck, is an ideal solution for selected storage, rapid retrieval, and minimal degrading effect on the dark-adapted eye.

Sidney Levin, of the Astronomical Society of the Pacific, will speak on "Microcomputer-Assisted Amateur Astronomy" at the Computer Faire. In addition to location-data programs, other useful programs discussed include: retrieval of events, dates, and times (Jupiter satellite eclipses, planetary oppositions); translation of known celestial coordinates to navigational ones (altitude and azimuth); software creation of a sidereal clock; and educational programs to illustrate principles of astronomy and physics.

Sidney uses a TRS-80 model 1, level II computer with 32K of RAM, and single disc drive. Programs are in BASIC and quite simple, though much of the sophisticated capability of the computer is utilized (trigonometric functions, real-time clock, and graphic display. All of the programs were originally stored on cassette tape, the only disadvantage being slow loading.

**FREE:  
Get Future Gazettes**

If (1.) you would like to receive free future issues of our glorious *Silicon Gulch Gazette* (worth at least every penny you pay

**WHATSIT  
Prints Charmingly**

"WHATSIT?" (trademark), a conversational filing and query program for personal computers, is now available in a new printing version for the Apple II, according to Computer Headware, its developer.

Called a "self-indexing query system," the program has been available since 1978 in versions for CP/M and North Star computers. By cross referencing data entries in disc storage, WHATSIT is able to answer direct questions, phrased in simple "pidgin English."

Always spoken of as "her" in the 160-page user's manual, WHATSIT distinguishes herself by her breezy, impertinent repartee, including such rejoinders as "News to me!" when queried for information not currently on file, or "Never mind!" when the user cancels a request unexpectedly.

An acronym for "Wow! How'd All That Stuff get In There?", WHATSIT responds at conversational speed ... even in files containing hundreds or thousands of entries. Typical response time is 2 to 10 seconds, the firm claims.

In contrast to the rigid formatting demanded by other programs, WHATSIT's open-ended data structure evolves continuously as the system is used. New file headings, unlimited in number, may be added any time ... then remain available for future reference.

To accommodate large files, the program squeezes 2000 or more entries onto a 5-inch disc ... up to a total 25,000 using four discs in the CP/M format. Detail entries are automatically cross-indexed under any desired headings.

Applications of WHATSIT include desktop indexing of investment portfolios, music or hobby collections, customer lists, household or professional files. At least one WHATSIT customer uses the system to index real estate listings.

New in the Apple model is a "Soundex Request," for retrieving entries by phonetic matching — useful when the spelling is unknown or forgotten. A "WHAT'S NEXT" Request, also new in the Apple model, switches on automatic self-prompting ... a handy time-saver when entering new data or updating what's already on file.

For further information, contact: Computer Headware, P. O. Box 14694, San Francisco CA 94114.

for it), and (2.) the mailing label on this issue does not have the mailing date in square brackets, then send your request to:

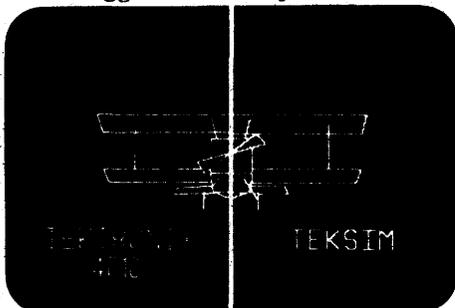
Free SGG, Computer Faire  
333 Swett Rd  
Woodside CA 94062

**Apple Enabled  
Emulation**

A new ROM-based device which enables an Apple II computer to emulate Tektronix 4010-series graphics terminals has just been introduced by ABW Corporation. TEKSIM, the "Tektronix Simulator," employs distributed processing in its programming approach and uses Apple's high resolution plotting capabilities. No modification to the host-resident program is required to display or input graphical data. Although the Apple has approximately 1/4 the resolution of a Tektronix terminal, a TEKSIM-Apple combination offers a substantial cost advantage, and exclusive features such as multi-colored displays, selective erase, and standard video output that lets any tv set func-

tion as a monitor. Typical TEKSIM image quality is demonstrated in the comparison above/below/at right/at left/etc.

Suggested retail price is \$795.



For further information, contact: ABW Corporation, Box M 1047, Ann Arbor MI 48106; 313-971-9364.

## Tiny Pascal,

**We Remember Him Well**

People's Software at nonprofit Computer Information Exchange is selling a tiny Pascal compiler for \$15.

Written in BASIC, People's Pascal I runs on any 16K, TRS-80 Level II system. Compilers let computerists write fast, efficient machine code while working with a higher-level language.

The People's Pascal I program development system comes on a tape with 14 programs, and 18 11"x17" pages of documentation. Programs include editor/compiler, interpreter, translator, run-time system, and two demonstration programs.

People's Pascal I compiler produces P codes, which the translator converts to Z-80 code, the TRS-80 native language. The user is given the option of optimizing for either speed or memory efficiency. Programs written via People's Pascal I run three times faster than those in Level II BASIC — graphics is eight times faster.

To produce object programs, the computerist must use the People's Pascal I programs, plus Tandy T-Bug. Use of Tandy editor/assembler is optional.

The People's Pascal I program development system, with editor/compiler and interpreter written in BASIC, and its multiple parts, is not the ultimate in speed and simplicity of use. People's Pascal II, at \$23, is easier to use and faster operating. It is all one machine-language program. Programs written in Pascal II do not execute quite as fast as those in Pascal I because the system does not produce Z-80 object programs of the user's source program.

Both Pascal I and II compile user programs into P-codes. Both systems work in an interpretive mode, interpreting P-codes into Z-80 codes. But Pascal I has a translator for creating Z-80 native-code programs, and Pascal II does not. In Pascal II, all user programs must be interpreted each time they are executed. Pascal II is still said to be four to eight times faster than Level II BASIC.

Pascal I is only for 16K systems. Pascal II is for either 16K or 32K systems. Pascal I has UCSD-like turtle graphics. Pascal I requires line numbers in the user program, and Pascal II does not.

Computerists wishing to buy direct should include 50 cents for each tape ordered, and California residents should add 6% tax (\$.90, and \$1.38, respectively, on Pascal I and II). Besides People's Pascal I and II, People's Pascal has three public-domain program tapes in Level II, and two in Level I, at \$7.50 each (plus 50 cents for postage/handling — California residents add 45 cents tax). The public-domain tapes have as many as 77 programs on them.

For further information, contact: Computer Information Exchange, Box 158, San Luis Rey CA 92068.

"Within the next decade, there will be several major disasters directly attributable to programming errors." — Jim Horning, 1979 U. C. - Santa Cruz Summer Computer Science Institute

**Pharmaceutical File  
Drags Out the Drugs**

The American Society of Hospital Pharmacists has announced the availability of the *Drug Products Information File*, a multifunctional data base in machine-readable form. According to the Society, it is a data file with English descriptions and standard codes, "inclusive of all pharmaceutical products, and applicable to any hospital."

Some of the features of the file include inventory control, drug list preparation, patient billing, drug use review, bid list preparation, label preparation, and drug information programs. The Society supplies the master file on magnetic tape, a printout of the contents of the tape, and a documentation manual.

For more information, contact Publication and Membership Records, American Society of Hospital Pharmacists, 4630 Montgomery Ave., Washington D. C. 20014.

## Conference Session

**Modular and  
Structured Programming  
On Small Systems**

The goal of programming is to write a sequence of instructions to implement an algorithm to produce the desired result. The goal of modern programming is to be able to write more than four lines of code at a time and still have that code work properly.

"Many programmers," says Terry Ritter, "have begun to follow a body of techniques that can be of significant help in the creation of reliable programs. My talk at the Computer Faire, 'Modular and Structured Programming on Small Systems (including 6809 Assembly Language)' will define these techniques, show why they are helpful, extend them for use in a small computer environment, and show how they can be applied at the assembly language level on the 6809.

"My talk presents a systematic new way of programming at the assembly language level. Using the described techniques, modular, structured programs can be written without using a high-level language. This is possible because the required structured-programming facilities have been identified, and each is available directly on the target machine (the MC6809). The assembly-language use of these facilities is not automatic, as it would be in a structured high-level language, but the facilities are available for use, and such use becomes convenient and obvious. The programming innovation consists of restricting the code to the use of ONLY the structured facilities. Although the 68809 is upward compatible from the 6800, 6800-like programs can only perpetuate those non-modular features which demanded the creation of the 6809 in the first place. Structured techniques were so complex on all early microprocessors that they reduced — rather than improved — the probability of writing a correct program, and drastically reduced performance, as well.

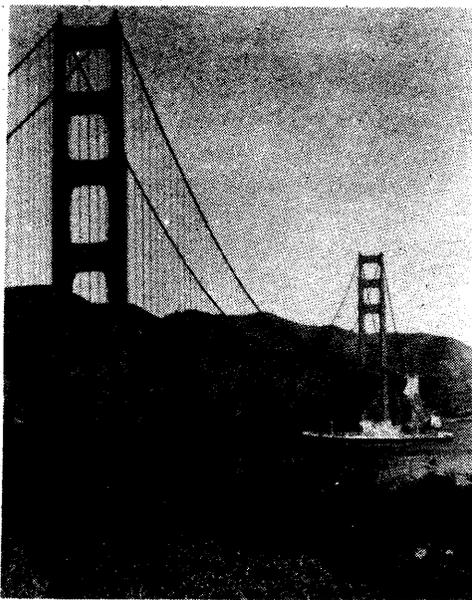
# Avoid Waiting in Lines Preregister for the Faire

Although the Computer Faire, itself, is not staffed to handle pre-registration directly, it has arranged for a number of cooperating stores to carry prereg packets. They are listed below.

The stores prefer that you drop by to pick up your prereg — they'd like to see you and have you see what they have to offer ("Know your dealer.") However, should you be unable to do so, several of them are accepting **mail orders** . . . if you do the following:

1. Send your mail order *early*. (Remember, the U. S. Snail Service will be handling its delivery in both directions.)
2. Send full payment (phone the store for their reg fee; by FTC regulations, the Faire cannot tell them what to charge), and a stamped, self-addressed, legal-size envelope.

The stores accepting **mail order preregistrations** are marked in the following list with an **asterisk**.



**Data Domain Schaumburg \***  
1612 E. Algonquin Rd  
Schaumburg IL 60195  
(312)397-8700

**Byte Shop SLC \***  
3616 W 2100 S  
Salt Lake City UT 84120  
(801)973-4446

**Byte Shop Reno \***  
4104 Kietzke Ln  
Reno NV 89502  
(702)826-8080

**Thorpe Data Systems**  
22968 Victory Bl  
Woodland CA 91367  
(213)703-6900

**Byte Shop San Diego \***  
8038 Clairmont Mesa Bl  
San Diego CA 92111  
(714)565-8008

**Computerland \***  
289 E. Highland  
San Bernadino CA 92404  
(714)886-6838

**MicroXchange**  
2031 De La Vina  
Santa Barbara CA 93105  
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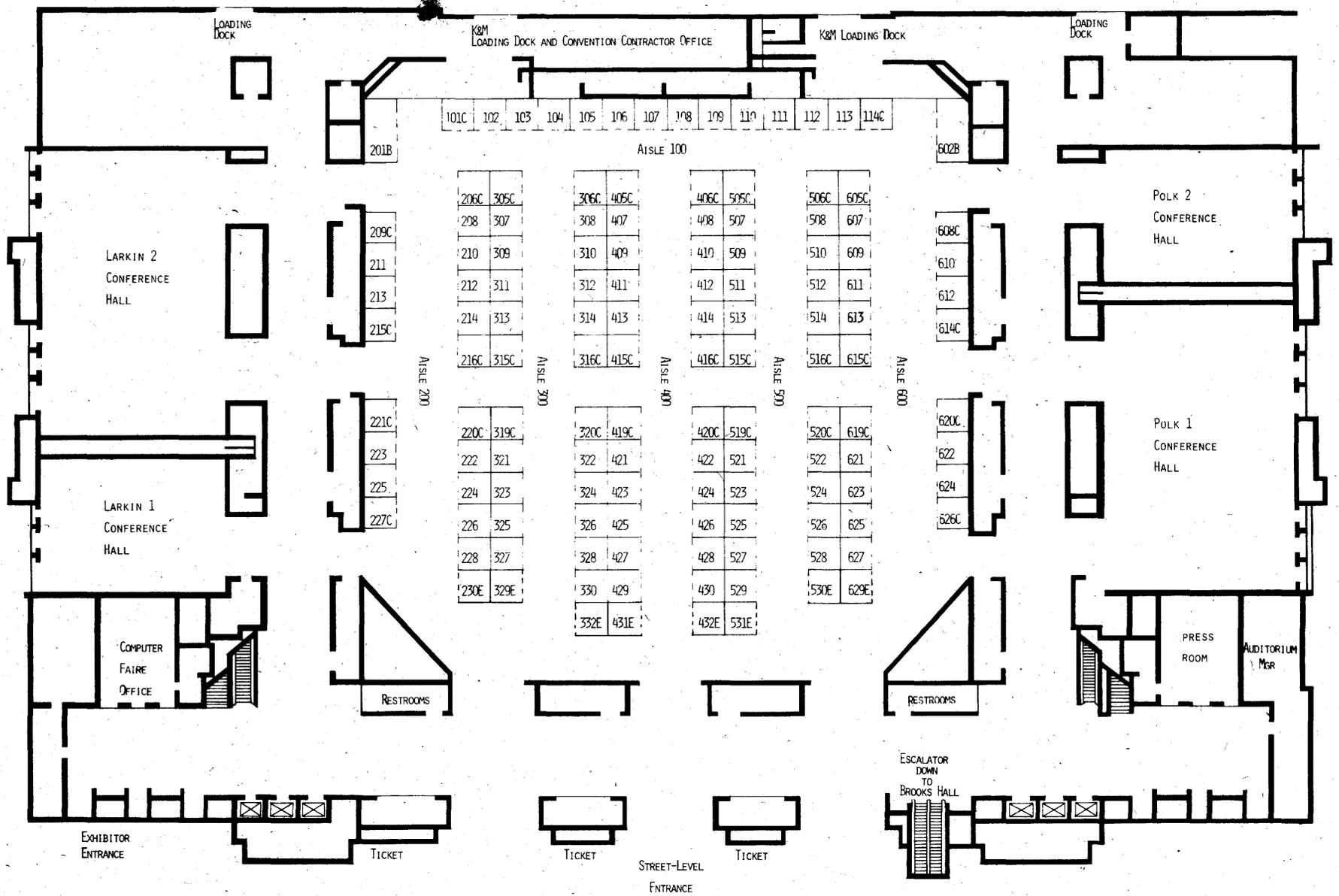
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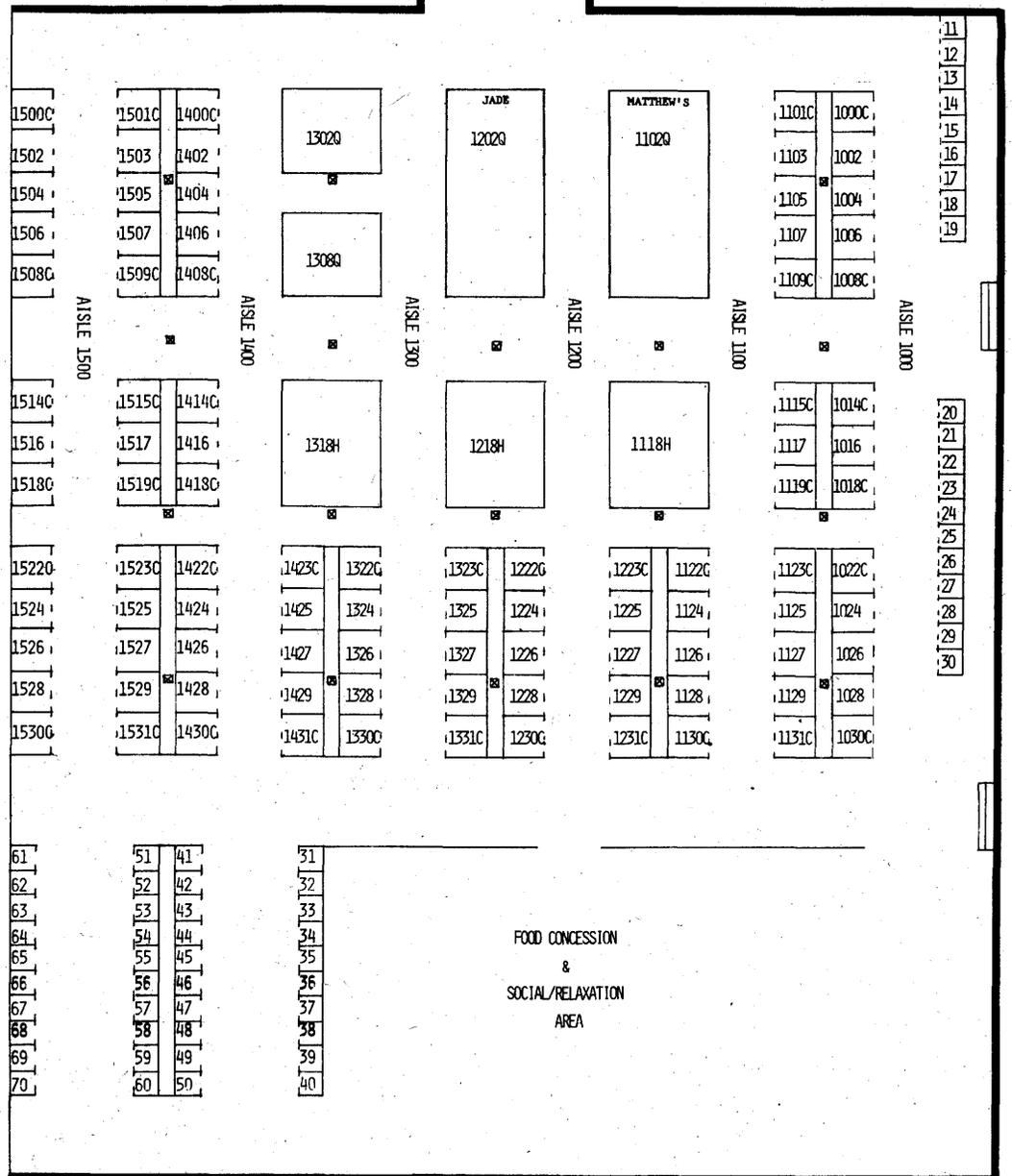
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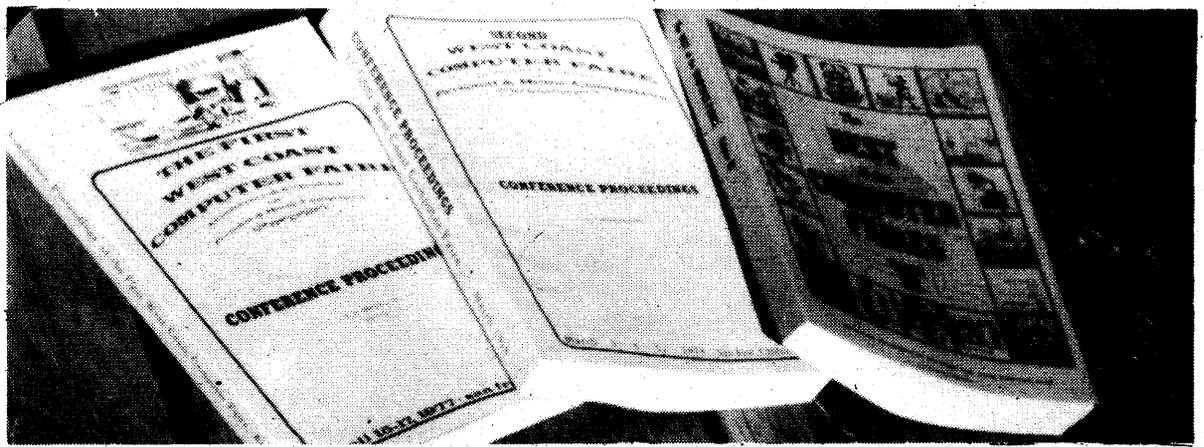
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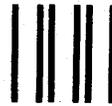
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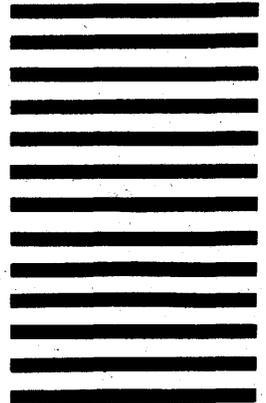
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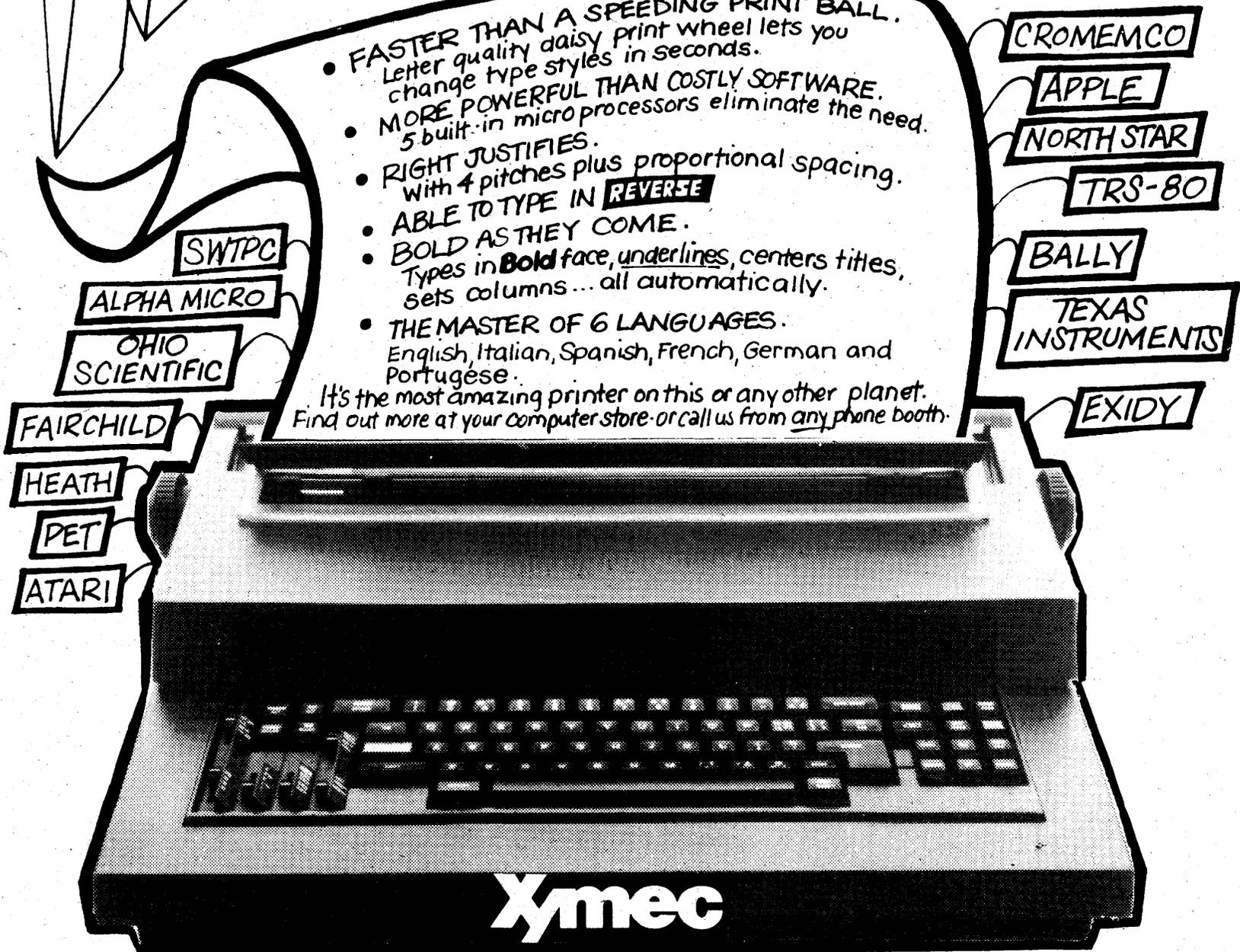


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