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Tap the telephone lines with your computer and light up the screen with a whole new universe of information, services, and products./Neil Randall __________ 20

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COLUMNS

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Telecommunications is the space shuttle of computing—too complex and too fragile to live with, too important to live without.
Gregg Keizer

News & Notes
Instant MS-DOS mix, armored attack computers, 27 million can't be wrong, and more noteworthy news of late.
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Orson Scott Card

Impact
Computers bring the Information Age home.
David D. Thornburg

Discoveries
What's a BBS without a phone? A message center, a computerized bull session, a place to pontificate—and all for next to nothing.
David Stanton

Levitations
Worried about Nintendo taking over the universe? Soothe your fears with this prefabricated SWAN song.
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Letters
Choice comment, low-cost lament, and time travel.
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Heidi E. H. Aycock

Atari ST
David Plotkin
Okay, Who Made Things So Tough?

I'm no rocket scientist. I don't pretend to be. But I do consider myself prepared for most personal computer tasks. I've used nearly every home computer made, from the flimsy plastic Coleco Adam to a top-of-the line IBM PS/2. I can pop computer covers, yank boards out and press them in, set up printers, install software, back up hard disks as well as anyone. As long as it doesn't involve solder or live electrical wires, I'll take it on.

Then why, for crying out loud, is it so hard to telecommunicate? Why can't a file get from computer A to computer B today, when it made it yesterday? What makes sending messages on a national information service so tough that it takes five tries to get it right? What's going on here?

Complex convolutions of technology, I guess. Telecommunications is, without a doubt, the most difficult, the most frustrating, the most delicate of personal computer applications. Telecommunications is composed of too many parts, any one of which can go bad and turn on you. Telecommunications is the space shuttle of computing.

Not only is there a computer involved, but there's also a mysterious device called a modem. Add the telecommunications software, which runs the gamut from the absurdly arcane to the barely usable. Toss in the phone line, which, as we all know from voice communications, isn't always the crystal-clear medium that pin droppers would have us believe. Finally, you've got to contend with the equipment on the other end and its strange software.

If the phone line isn't quite clean, or your software isn't set quite right, or sunspots are too active, you'll have trouble. Fixing things isn't easy, for you must first locate the problem—usually through a hit-and-miss process of elimination—before you can correct it (assuming you can make corrections).

All this is terribly time-consuming. Tracking down trouble is never fun, and in telecommunications, it's hell. A good rule of thumb is to allow yourself at least three times as long as you think necessary to handle any telecommunications chore. I can't remember the last time a session I thought would be only 15 minutes long actually lasted only 15 minutes.

Once you get everything running and you manage to get connected with a bulletin board or information service, you've got to struggle through even the best. Commercial systems aren't much better, for you're either slugging it out with menus or trying to recall what odd alphanumeric combination calls up the area you're after.

Downloading public domain and shareware software, although a popular pastime on bulletin boards and services, is daunting enough to send thousands scurrying for the nearest user group library or public domain disk collection. Assuming you get everything right and get software downloaded into your computer, you still may not be ready to run what you've grabbed. You may have to download even more programs—file compressors, conversion utilities, virus checkers—before you can use the ones you have.

The final insult comes when you get the bill for your online exploration. Sit down, grip the chair firmly, and don't scream when you see the first month's tally.

It's as if there's a telecommunications conspiracy—how else do you explain such formidable obstacles thrown willy-nilly into the beginner's path?

To be truly useful, to really persuade most (or all) home computer users that it's a great idea, telecommunications had better wake up. Unless it's as easy to use as the phone (or as near to that as possible), telecommunications won't affect anyone beyond the thousands of computer technophiles. Millions of potential users will simply take a telecommunications rain check.

There has been some progress of late. Services such as the recently introduced PC-Link and AppleLink offer graphic interfaces for easy access and make connecting almost automatic. Compuserve's Navigator, a Macintosh-specific program, uses that machine's vaunted graphics to simplify nearly every telecommunications task. GEnie, the pioneer of low-cost telecommunications, is growing fast, proving that high prices aren't an inherent part of the business.

Push those ideas to their limit and you'll have telecommunications for the masses: cheap rates (how about equivalent to the cost per hour of other entertainment, such as movies?), machine-specific, service-specific software that takes the sting out of logging on and getting around, and electronic message systems as simple to use as a typewriter. Make things simple, simple, simple.

Only then will our computers pick up the phone as often as we do.
Consumer Computers

Winter's Consumer Electronics Show (CES) is held every January in Las Vegas, terra firma for gamblers, hustlers, and, for a few days, anyone connected with electronics. Computer software publishers, at least those with an interest in the consumer (read home) market, head there, too. Hardware manufacturers, on the other hand, seem to think that the home is not a fit place for a computer, and so are harder to find at CES.

One of the few hardware manufacturers that’s not hard to find is Vendex, the maker of a popular line of IBM PC-compatible computers. All you have to do is look for the company’s spokesman, King Kong Bundy, a bald-headed professional wrestler who looks as though he could tear a computer in half.

Vendex has specialized in bundling well-made MS-DOS machines with easy-to-use software and selling these computers through mass-market merchandisers, not computer dealers. In the process, Vendex has made a name for itself among home and home-office computer users.

Its most recent introduction is the Vendex HeadStart III, an 80286-driven PC AT compatible (8 and 12 MHz) equipped with 1 megabyte (MB) of RAM, a 32MB hard disk, a 360K/1.2MB 5½-inch drive, a 720K/1.44MB 3½-inch drive, and built-in VGA graphics. A slew of software also comes in the box: Framework II, Twist & Shout, Publish-It!, Splash, XTree, and Chessmaster 2000 are among the 14 packages included in the system. All this costs $2,995 list; look for a lower street price, though.

The only things not part of the Vendex HeadStart III package are a printer and a monitor. One of the latter is often thrown in by the seller, said Henry Fox, executive vice president of Vendex, without exceeding that $3,000 price tag.

The combination of dependable hardware, included software, availability through major mass merchants, and low cost seems to attract the potential home computer buyer who is intimidated by traditional computer dealers. People who own home-based businesses get help from the organization reports that a million new home ventures are launched each year and that home businesses will contribute $100 billion to the nation's economy in 1989.

The average home-based business owner is 38.8 years old and married, has two children, earns $56,000 annually, owns a home, has graduated from college, and has worked for a large corporation for several years, says the AHBA.

Consulting is the most popular home-based business. Other professions include accounting, veterinary care, writing, editing, psychology, dentistry, and commercial art. The personal computer is partly responsible for the boom in home-based businesses, according to Dorothy Denton, executive director of the Association. “It’s made it possible for people who have always had an entrepreneurial bent to start a business without a large support staff because computers can do the work of many people,” she said.

People who own home-based businesses can get helpful information and assistance from the Association. The group offers a monthly newsletter, tax information, group insurance, and a buying service that provides savings on office equipment.

For information, contact the American Home Business Association, 397 Post Road, Darien, Connecticut 06820; (800) 433-6361.

— Gregg Keizer

Home Is Where the Fax Is

If you work out of your home, you’re in good company. More than 13 million full-time businesses operate out of American households. Another 14 million people work part-time from the home, according to the American Home Business Association (AHBA). With those numbers comes power—
The Latest Sim Craze

Remember—you heard it here first. The hottest computer simulation category in 1989 will be tank-combat sims. Forget about flying 100 feet off the deck at Mach 2 with some two-bit pilot from the Third World in your jet fighter's sights. Forget about diving 100 fathoms as you escape a determined destroyer captain who will be happy only when he sees your sub bubble up. Instead, think about sticking your head out a turret hatch as you guide a modern metal monster across battlefields littered with smoking wreckage.

Tanks are but the most recent technological marvel portrayed in computer simulations. Submarines, jet fighters, and helicopters have been done to death. The armored behemoth may be the last machine left to simulate on the screen.

Several software publishers have come to the same conclusion and have been busy developing tank simulations. Acolade was first out the gate with Steel Thunder, a game for the Commodore 64 that puts players inside one of four armored vehicles: the M48A3 Patton Battle Tank, the M60A3 Main Battle Tank, the M5 Bradley Cavalry Fighting Vehicle, and the M1A1 Abrams Main Battle Tank. Steel Thunder, which is more an arcade-style action game than a realistic simulation, lets you assume the roles of tank commander, tank driver, and tank gunner. A fourth crew member, the loader, is computer-controlled, but vital: If he's slow or tires easily, you'll have a hard time of things. Graphics in Steel Thunder are adequate, but not dazzling. Stick figures, for instance, stand for enemy infantry.

Electronic Arts should have its Abrams Battle Tank on the shelves by the time you read this. Abrams runs on MS-DOS machines and is a more realistic portrayal of modern armored combat. Several crew stations let you rotate from commander to gunner to loader to inside the M1A1 Abrams, the Army's front-line battle tank. Three-dimensional graphics spice up the screen, and a bevy of targets pop up in front of your thermal sights. You can lay smoke as cover, and even take on Soviet choppers. Play levels let you determine the fight's ferocity. At the lowest level, for instance, your tank can take hit after hit and roll away from the action virtually unscathed. Play at the highest level, though, and a single round can brew up your tank in moments.

Other publishers are rumored to be working on tank simulations. The most prominent names bandied about are Spectrum HoloByte, of Falcon fame, and MicroProse, creator of such landmark simulations as Gunship, Silent Service, and F19 Stealth Fighter.

If this crop is any indication, the year should see a lot of fighter jocks ground themselves for a chance to take a turn or two in the turret. Meet you on the battlefield.

—Gregg Keizer

Radar detectors: Which are really best?

These days every maker says their radar detector is best. Who's telling the truth? Freedom of the press

If you read movie ads, you know how each one finds a short phrase from a review that makes it sound like "the year's best." Well, some detector makers play the same game.

But we won't play games. Below are the overall results of three recent independent tests of radar detectors.

LATEST PERFORMANCE RANKINGS

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<th>Car and Driver</th>
<th>BMW Roundel</th>
<th>Popular Mechanics</th>
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<td>Escort (not tested)</td>
<td>1st Passport</td>
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Although each staff of experts used different methods to evaluate the detectors, their conclusions were unanimous: Escort and Passport are winners.

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Much Ado About Mac

Tens of thousands of enthusiasts, corporate buyers, software developers and publishers, and interested onlookers swarmed over San Francisco in January to help Apple celebrate the Macintosh's fifth birthday. MacWorld Expo filled both of the city's major convention centers with hundreds of exhibits, despite a noticeable Sunday afternoon drop-off following the kickoff of the Super Bowl, total attendance topped 60,000.

Apple CEO John Sculley set the tone with a multimedia keynote address demonstrating the Mac's ability to interface with television images. Wearing an Apple sweatshirt, Sculley used a Macintosh II to drive a laser-disc video history of the Mac, which included the first of the weekend's showings of the company's classic "1984" commercial. Promising further progress toward his vaunted "Knowledge Navigator" personal computer, Sculley leaned more toward style than substance in his presentation, but style seemed to be what his audience wanted.

On the product front, the big news was Apple's introduction of the Macintosh SE/30, a powerful computer that incorporates many features of the Macintosh II. With a 16-MHz 68030 at its heart—augmented by a 16-MHz math coprocessor—the SE/30 accesses its RAM at speeds equal to those of the Mac IIx. In its basic configuration, the SE/30 includes 1 megabyte (MB) of RAM and a high-density floppy drive. Other configurations include a 40- or 80MB hard disk and more RAM. The floppy drive can access MS-DOS, OS/2, and ProDOS disks.

An upgrade kit will be available for current Macintosh SE owners. Claris debuted MacWrite II, the successor to MacWrite. The new program was built from the ground up and delivers features such as sharply increased speed, WYSIWYG capabilities, resident HyperCard help, and advanced formatting capabilities. Perhaps the greatest excitement at the show was generated by Silicon Beach's SuperCard, a customizable software toolkit compatible with Apple's HyperCard. SuperCard, as much a software-authoring environment as a toolkit, includes a runtime program for executing user-designed applications.

Entertainment software for the Macintosh was more in evidence at this MacWorld. Mediagenic attracted a lot of attention with its CD-ROM version of The Manhole, a HyperCard narrative. The Whole Earth Catalog on CD-ROM was demonstrated by Broderbund, and MicroIllusions showed a Macintosh II version of Faery Tale Adventure. Discovery's Arkanoid continued to attract fans. Mindscape boasts the largest rollout of Macintosh entertainment and began building suspense for Chris (Balance of Power) Crawford's latest exercise in simulated budget balancing, Guns and Butter.

— Keith Ferrell

Quick Decision

U.S. Supreme Court decisions may become more accessible than ever. A committee of department heads is considering a system that would download decisions from the Supreme Court's Atex system into a PC from which an outside organization would publish the text on a public telecommunications network.

Right now, the court issues decisions at 10:00 a.m. It takes about 24 hours to scan typeset opinions into legal databases like Mead Data General and news-service databases like the Associated Press. With the new system being considered, the opinion could be transferred to interested people by a few minutes after 10:00.

"It's in the court's best interest to get the opinions out to as many people as it can as fast as it can," public information officer Toni House said.

The electronic opinions would be available in raw form only—no keywords, no notes, no automatic cross referencing, no indexing. You would, however, be able to download these files and manipulate the information. House said the system won't compete with legal research databases like Lexis and Westlaw.

"We're looking at who needs the information when," she said. "We started down this road because of people interested in legal matters, and our principal objective has been to receive Supreme Court opinions in machine-readable form as fast as possible."

Those who would benefit from this service include lawyers, legal researchers, and the news media. The instant opinion service is still only an idea. The committee has invited organizations to make proposals but hasn't decided whether the service would be feasible.

— Heidi E. H. Aycock continued on page 82
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**news&notes**

Giving Games the Female Touch

Geoffrey the Steel-Hearted Game Designer faces the gruesome Riddle Beast and asks, "What's the hardest riddle in the universe?" The Riddle Beast rear back his spiked head and bellows, "That's easy: How do we get women and girls to play computer games?"

And all the software companies nod their heads as the Riddle Beast again bests Geoffrey. For the most part, the entertainment-software market is a male world. But some companies are fighting that trend and trying to attract women and girls to their products.

Sierra, for instance, has released King's Quest IV: The Perils of Rosella, in which the lead role is female. The game was designed by Roberta Williams, who wrote the other installations in the King's Quest series. "It's a risky proposition," she said. "But I think it's high time we had a heroine. As one of the few women game designers in the business, I think I would have been riskier for us not to introduce a heroine."

Other games—such as Sword of Sodan, from Discovery Software, and Axe of Rage, from Epyx—let players choose the sex of the main character.

Changing the sex of the main character may not be enough, though. New plots with less violence and aggression may be necessary. Williams' latest project is The Plantation Murders—a 1920s murder mystery with another female lead character. Solving the mystery is more important than physically subduing another character.

Doug Glen, of LucasFilm, feels that the company has successfully attracted women by approaching game design differently. "You've got to have a philosophy about the meta-game instead of trying to feminize aspects of a masculine game."

LucasFilm's market research shows that in the under-18 category, 15 percent of the audience are girls. In the over-18 category, 30 percent are women.

Attracting young women may be the toughest part of the riddle. Because young girls traditionally don't use computers as much as young boys do, the software market isn't driven to win the group. And if young girls don't use the computer, they can't offer any input.

The Riddle Beast eats Geoffrey the Steel-Hearted Game Designer and says, "Next!"

— Heidi E. H. Aycock

continued on page 82
Every now and then a game comes along that is so dangerously addictive that it sucks your brains out through your fingers. Such a game is Tetris (Spectrum HoloByte). It was programmed by a Russian, and I warn you, this game will steal weeks from your life.

You'll sit down at your computer, intending to get some work done, and suddenly there will be these geometric shapes slipping down the screen. You'll rotate them until they fit—or fail to fit—into a slot in the pile of objects that have already fallen. When a shape completes a horizontal row, the row disappears. But if too many shapes can't fit, they pile up to the top of the screen and you're dead.

I have played until I see these dumb little concatenations of four tiny squares sliding down before my eyes as I'm trying to read, as I'm watching TV, as I'm driving.

Tetris proves that Russia still wants to bury us. I shudder to think of the blow to our economy as computer productivity crops to 0.

And it isn't even fun. It's the Computer Game from Hell. I've even erased it from my hard disk—but it keeps coming back.

If you don't believe my conspiracy theory about Tetris, try this for evidence: Tetris isn't copy-protected. That's right, a hot new computer game, and you can make as many copies as you want. Obviously the game is meant to find its way onto every American machine. If the Russians were sincere about Perestroika-style game marketing, they'd copy-protect this sucker eight ways from Tuesday, like true-blue, red-blooded American game designers do.

Take MicroProse's Pirates!, for instance. Admittedly, its title is like a red flag for game thieves—how delicious to give your friends pirated copies of Pirates!, right? But they go way overboard. Not for MicroProse the old-fashioned key disk. No, you have to boot from the game disk. You can't copy even part of the game onto your neat new 3-picosecond, 9-gigabyte hard disk from Mattel. It's the A: drive or nothing.

As if that weren't enough, the company also requires you to come up with passwords out of the manual. Now, I approve of passwords as the most humane copy-protection scheme. The people at Lucasfilm Games, for instance, have worked their passwords into Maniac Mansion and Zak McKracken so deftly that it feels like you're still playing. And if you hold their un-Xerox-able black-on-dark maroon password list just right, you can sometimes read off the numbers without going blind. But passwords and boot disks? These folks from MicroProse are deeply paranoid about copy protection.

Ah—but with reason. Pirates! is so good that even people who drive 55 mph might consider stealing it. You're captain of your own ship in the Caribbean during the great era of piracy. Choose to be English, Dutch, French, or Spanish—you're your career as a swashbuckler will be thrilling.

It may also be short. This game feels easier than it actually is. Sure, you get right into your boat and start tooling around the Caribbean. Even the one-on-one sword fighting is so well programmed to fit the numeric keypad that it takes only a little practice before you're parrying and thrusting with the best of them. But after a while you realize that there are nuances to the game. When do you use your cannon, and when do you grapple and board? When should you divvy up the spoils? Should you propose to the governor's ugly daughter? How do you get out of a duel you think you might lose without earning infamy as a coward?

I'm afraid that I'm still a rank amateur, though. Even when I try to move up to the next level, the program senses my ineptness and demotes me. Only once have I managed to complete a good career and retire in honor and dignity.

Friends of mine have fared better, but no one has enjoyed it more than I have. This game feels like life—only more exciting and a lot faster. Splendid graphics in every phase of the game make it a pleasure to play, and it is so deftly designed that it never becomes tedious.

By contrast, Annals of Rome (PSS) looks like it was programmed in the Bronze Age. You can go blind squinting at a screen full of cryptic codes. Yet despite its appearance, I assure you that the game designers have done a splendid job of letting us relive—and rewrite—the history of the world's greatest empire. The programmers have a real understanding of that epoch, and I enjoyed playing the game. If I had never seen the good graphics and humane interface of Pirates! or Romance of the Three Kingdoms, I'd be perfectly satisfied with Annals.

But I have. So I'm not. The people who created Annals of Rome deserve better sales than they're going to get. But then, we players deserve a better visual experience than they've given us. It's almost fair.
Computers define the world of communication. Electronic transmission has moved so far since its inception that Morse, Bell, and Edison would hardly recognize the tools we now take for granted. We can’t pick up a telephone without causing millions of dollars’ worth of computer equipment to spring into action. Even facsimile, a very old communication technology, has been revitalized through the use of computer-based fax machines.

We’ve grown used to transmitting documents during off-peak early-morning hours and to bringing paper documents onto a computer display screen by means of high-resolution scanners. In fact, these communication tools have infiltrated our businesses so deeply that we would be lost without our high-tech toys.

Recently, while on a speaking engagement in Washington, I got a taste of how far communication technology reaches. On my way back to the airport, the phone rang in my host’s car. She picked it up and said, “It’s for you.” Communication tools have become so pervasive that we never have to be out of touch—no matter where we are.

But even as computers are influencing older electronic media like telephones and facsimile machines, the medium that has felt the greatest impact is paper.

Visions of workers sitting at immaculate desks, conducting all their business communication electronically, occupy a prime place in the computing imagination. The communicative power of satellites, cellular radio, and high-speed phone lines were once considered so great as to one day replace cumbersome paper. Futurists plotted the rise in postage, showing that it would cost less to send a document instantly over a phone line than it would to send it slowly through the mail.

But even though those price predictions have come true (especially for local calls), the post office still staggers under a mound of paper that grows larger all the time.

The truth is, computers don’t eliminate paper; instead, they extend its utility by enhancing its expressive power. The popularity of desktop publishing software and hardware proves how attractive that power is. Poster and greeting-card programs like Broderbund’s The Print Shop have probably felled more trees than last summer’s wildfires in Yellowstone.

This romance with desktop publishing would never have bloomed if our computers and printers were restricted to only one typeface. Fortunately, we have a cornucopia of tools that let us craft a page as a work of art. The ease with which the computer allows us to mix graphics with text, adjust type size and style, and even pick from a variety of typefaces has made many people more aware of the communicative power of the written word. Because of the computer, the rest of us are finding out what graphic artists have known for ages: The content of a message is embodied in its words and its graphics style.

Besides enhancing the look of printed documents, the computer has reduced the entry fee for publishing. Prior to the creation of inexpensive computer systems, which support low-cost laser printers, anyone who wanted to publish a brochure or a book had to enlist the expensive services of a typesetter. But now computer users can publish books or pamphlets themselves.

The number of small publishers is growing rapidly as authors who once moved through the publishing giants now take matters into their own hands. This move to personal publishing is resulting in a large number of books that would not otherwise have been published. Not all are masterpieces, by any means, but that’s a small price to pay for the freedom that computer-based publishing has brought us.

The computer’s enhancement of paper communication is but the forerunner of what’s in store for our other modes of communication. Already there are children who have never seen a rotary-dial phone; the push-button world of computerized switching stations has eclipsed the world of finger dialing and hometown operators. Video-screen telephones, which are still a novelty, will one day be as prevalent as telephone booths. Pay-per-play movies, instant face-to-face international communications, instantaneous information retrieval—the information age will come home to us through inexpensive terminals that will make today’s personal computer look like an abacus.

Our right to communicate freely is granted through the First Amendment to our Constitution. There is no guarantee, however, that the right of free communication will remain in our hands unless we vigorously exercise that right as often as possible. Our personal computers can play a key role by serving as the tool with which we learn new ways to express ourselves—no matter what the medium—to the fullest benefit of all.
Mac Choices
Your January awards issue truly proved that COMPUTE! hasn't forgotten that most home computer owners have neither the want nor the need for superexpensive, feature-laden software.

However, as a Macintosh owner, I must disagree on two points. Although MacWrite is an inexpensive, useful program, WriteNow 2.0 outshines it in almost every respect. It has a much more friendly user interface and incorporates other important features that MacWrite doesn't, including impressive speed and auto-numbering footnotes. I'm sure you'll agree that these features are important to a student or even an occasional computer user. I might also add that although WriteNow costs more than MacWrite, it can be ordered from discount software vendors at a very reasonable price.

Second, I'd like to point out that the Amiga indeed does have a peer, when it comes to graphics, in the Macintosh II. Several Macintosh paint and draw programs are capable of displaying many more than 4096 colors. Case in point: Studio/8 from Electronic Arts is capable of painting with all 16.8 million colors that the Macintosh II can display.

Russell Arcuri
Utica, NY

Time Travel
Who goofed? I just received my February 1989 issue of COMPUTE! and settled back behind my desk to read through it—and was I surprised!

Are you way ahead of yourself for next Christmas or behind yourself from the Christmas past?

Kenneth C. Sickels
Phillipsburg, NJ

Mr. Sickels refers to "Editorial License," in which we say "With Christmas still a month away, there's no way I can know how many personal computer owners will buy in the 1988 gift-giving season."

Because of the lead times inherent in magazine publishing, we're often forced to practice a crude form of time travel—we write of the future knowing that it will be the past by the time you read it. Make sense?

If not, just remember. That's why we call the column "Editorial License."

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PRINTED IN THE U.S.A.
There's no denying it. I'm an addict. Just ask the local sysops (system operators)—they'll tell you. Or call and check their users' logs. No other name appears more often.

Not that my timing is especially regular. BBS (bulletin board system) fever strikes unpredictably at any hour. Just sitting down at the keyboard gives me the urge. Thinking about writing a new column prompts it. The tolling of the clock triggers it (cheaper rates after 11:00 p.m.). Saturday morning's sunrise evokes an especially strong craving (low weekend charges, you know).

Nor is it an irresistible desire to chat that lures me past business applications, around paint programs, and under and over enticing sound-manipulation software to stop directly at my favorite terminal emulator. Like most addictions, this one can't stand up to the merciless scrutiny of logic.

Maybe an overwhelming desire to be the first to know drives this compulsion. Maybe it feeds on an irrational fear of falling behind in a field with which no one person can keep pace. Possibly it's one man's version of "shop till you drop," an insane need to stock tomorrow's computer lawn sales with today's great software deals.

Whatever the explanation, that addiction explains why this column is not about recent studies on the effectiveness of computer-assisted instruction (CAI) in the nation's schools. That one was progressing nicely one Sunday afternoon when my mischievous mouse plotted an escape and scrambled off for my telecommunications software. Coveting did no good. Only a diversion would mollify the plastic rodent. My modem's red lights began their captivating dance.

Three hours and $12 later, I was the proud owner of a fully functional copy of Warp 6 (Apple II), a freeware electronic bulletin board system. With it or similar software for other operating systems, an Enterprising person can start a BBS.

Right then, though, I had a column to finish. Unfortunately, by the time I returned to contemplate the pros and cons of CAI, the Muse had gone. Only a nagging suspicion that my new software might somehow prove useful remained.

Introducing students to the pleasure of telecomputing is difficult. School administrators often veto even limited access to commercial services (something about budgets). In rural areas, access to small, free boards is limited. What to do?

Like many similar programs, Warp 6 can operate in a purely local mode. Set up this way, it requires no phone line and no modem. Instead, Control-L from the host triggers an answer exactly as if the signal has come from a remote terminal. Thus, a perfect BBS simulation can be effectively run from one computer acting as both host and remote. To anyone but a frugal educator, this might seem pointless. It does, however, suggest fascinating possibilities.

Suppose the computer club or an English class or the school newspaper staff decided to set up an entirely local BBS. Would-be sysops could practice until they got it perfect. Students could write welcome messages, validate new users, maintain text files, and perform all the other required tasks. Where else could so many gain the sysop experience so easily?

"But who wants to run a BBS that no one calls?" you might ask.

A well-maintained board will generate action. Just use a little imagination. Design your BBS to serve its constituency and success is guaranteed.

Why not set up a few forums where kids can express opinions on sports or politics or school rules? How about one where students, teachers, and administrators exchange views? Maybe one section could list classroom assignments (no more "Did we do anything in class a week ago last Tuesday? I was absent" questions). And the E-mail section will be a surefire hit: Consider the long-time classroom tradition of exchanging notes! Whether "callers" work with educational games, write private or public messages, or simply read the work of others, they'll learn and enjoy every minute.

Home users, too, can benefit from this concept. Youngsters interested in establishing their own BBS can practice and prepare by running a local, family system. Members can post messages, write happy-grams to brighten each other's day, and maintain shopping lists and print them out when needed.

Who knows where your school or home BBS simulation might lead? Maybe some will decide to take their act on the wire. Others may discover that playing sysop involves too much hard work. Whatever the outcome, everyone is sure to benefit from the experience. Try it—I promise you won't be disappointed!

David Stanton can be contacted via CompuServe (72407,102) or by mail at P.O. Box 494, Bolivar, New York 14715.
A Titanic Adventure
The world's most famous shipwreck comes to the computer screen with IntraCorp's Capstone adventure simulation, Search for the Titanic. Reviewed for accuracy by the staff of the Woods Hole Oceanographic Institution, the organization that first discovered and photographed the Titanic site, the program contains digitized pictures from actual photos of the sunken ocean liner.

Begin as an inexperienced oceanographer searching for the wreck of the Titanic; then build a reputation as an explorer by finding and exploring other lost vessels and earning the resources necessary for funding your search. Each expedition requires money, a ship, personnel, and the correct equipment. You must chart your own course and battle the elements as you explore more than 75 shipwrecks.

Search for the Titanic features over 100 navigational maps and charts, 47 ports of call, realistic weather patterns, underwater cameras, and minisubs. It's available for the IBM PC and compatibles, Apple II, Atari ST, and Amiga for the suggested retail price of $39.95. The Commodore 64/128 version sells for $34.95.

IntraCorp, 14160 SW 139th Ct., Miami FL 33186
Circle Reader Service Number 200.

The Force Is with Broderbund
Broderbund has based its latest release, Star Wars, on the Lucasfilm movie and the coin-operated videogame.

Take the role of Luke Skywalker as you maneuver an X-wing fighter through attack waves in an attempt to destroy the Empire's Death Star. The 3-D view from the cockpit provides images similar to ones seen in the movie. You can even hear the Star Wars theme by pressing a spot on the software box.

The versions for the IBM PC and compatibles, Amiga, and Atari ST have a suggested retail price of $39.95. The Commodore 64/128 release is priced at $29.95.

Broderbund, 17 Paul Dr., San Rafael, CA 94903-2101
Circle Reader Service Number 201.

Now You See It . . .
Now You Don't
Gain more desktop space with the Curtis Keyboard SpaceSaver from Curtis Manufacturing. The keyboard can be installed underneath your CPU housing or your desktop. Just slide the keyboard out when you're ready to use your computer.

When installed on a desktop, the SpaceSaver holds a CPU and monitor. For installation beneath the desktop, the package includes mounting screws. The product can also protect your keyboard from spills, dust, and debris.

The SpaceSaver can mount a keyboard beneath the CPU or under a desktop.

The SpaceSaver has a suggested retail price of $39.95.
Curtis Manufacturing, 30 Fitzgerald Dr., Jaffrey, NH 03452
Circle Reader Service Number 202.

Tangled Up with Origin
Origin has released a fantasy role-playing adventure, Tangled Tales: The Misadventures of a Wizard's Apprentice for the Apple II and Commodore 64/128.

You assume the role of a wizard's apprentice and receive three progressively difficult tasks to perform as proof of your worthiness. The game features a world of haunted houses, medieval fortresses, and contemporary country farms. As the game progresses, you meet more than 50 odd characters.

Tangled Tales uses a menu and icon interface and is designed to have a lighter theme than others in this genre.

The game sells for $29.95. Origin products are distributed by Broderbund.
Origin, 136 Harvey Rd., Bldg. B, Londonderry, NH 03053
Circle Reader Service Number 203.

Mac Sports
Accolade has ported two of its most popular sports games to the Macintosh. Now Mac users can tee it up with Mean 18 Ultimate Golf and throw the long bomb in 4th & Inches.

In Mean 18, one to four players can challenge Augusta National, Pebble Beach, St. Andrews, or the custom-made Bush Hill Country Club golf courses. Each of the courses can be redesigned by using the built-in course architect.

Players first choose to compete in stroke, best-ball, or match play and then select a skill level. They can also choose whether to tee off from the regular or pro tees.

Mean 18 is available for the Macintosh SE, II, Plus, and 512KE and requires 512K of memory. The suggested retail price is $44.95. The game has been released previously for the Apple IIgs, IBM PC and compatibles, and Amiga for $44.95.

With 4th & Inches, you run a full 11-player offense against a full 11-player defense. Assume the role of coach by calling the plays and directing their execution on the field and by selecting a formation, a play, and a player to control. You can also call timeouts and make substitutions. The players on each team are rated according to height, weight, and years played; an assessment of the speed and strength of each player is also given.

The game has a suggested retail price of $44.95 and is available for the Macintosh SE, Plus, and 512KE. At least 512K of memory is required. The game is also available for the IBM PC and compatibles for $39.95.

Mickey McLean
Epyx's Newest Jewel

Assume the role of the savvy Devon Aire, a reformed cat burglar, in Epyx's Devon Aire in "The Hidden Diamond Caper." Devon has been hired by the wealthy widow Crutchfield to find her priceless jewel collection. Her late husband trusted no one and stashed the jewels somewhere in the mazelike Crutchfield manor.

To find clues, you must search more than 30 rooms, secret passageways, and hidden doors that conceal the Crutchfield mansion's mysteries. In addition to revealing the mansion's secrets, you must also avoid mutant pigeons and killer canaries—the results of Old Man Crutchfield's genetic experiments.

You have three chances to find all the jewels and return them to Lady Crutchfield, but, even then, you still must find a way out of the mansion.

Versions for the Amiga and Atari ST have a suggested retail price of $49.95. Commodore 64/128 and Apple II editions sell for $29.95, while the IBM PC and compatibles version is priced at $39.95.

Epyx, 600 Galveston Dr., P.O. Box 8020, Redwood City, CA 94063
Circle Reader Service Number 205.

Jungle Warfare

Taito's Operation Wolf is set in a steamy jungle where heavily armed terrorists hold innocent civilians hostage. You must instigate a commando-style mission to free the hostages by overtaking the captors in a weapons facility, routing them from a jungle hideout, and finally leading the hostages aboard a rescue plane.

In the game's six missions, you must overcome enemy gunboats, helicopters, armored vehicles, and enemy soldiers. Sound effects include the sound of rotor blades and staccato bursts of gunfire.

Operation Wolf, designed for the Commodore 64/128, sells for $34.95. Versions for the Amiga, Atari ST, and IBM PC and compatibles will be released shortly.

Taito Software, 267 W. Esplanade, Suite 206, N. Vancouver, B.C., Canada V7M 1A5
Circle Reader Service Number 208.

Courting Magic

Earvin "Magic" Johnson will endorse Virgin Mastertronic's planned basketball game, to be released under the Melbourne House label. Magic Johnson's Basketball will be a translation of Arcadia's arcade game Magic Johnson's Fast Break. Johnson contributed not only his name to the product, but also commentary on style and technique.

According to Mastertronic, the game features seven rounds of two-on-two play and a final round where players face the magic man himself. Players can execute set plays, including the pick and roll and alley-oop. They can also slam dunk and lead the fast break.

Initially, the game will be released for the Amiga and IBM PC and compatibles, with Apple II and Commodore 64/128 versions to follow later this year.

Virgin Mastertronic, 711 W. 17th St., Suite G9, Costa Mesa, CA 92627
Circle Reader Service Number 207.

Street Gangs and Cycles

In Data East's action-oriented street-fighting game, Bad Dudes, you assume the role of a modern-day hero sent to rescue the President of the United States from deadly kidnappers. Blade and Striker, two street fighters who are out to preserve good and justice, must fight their way through waves of ninjas, dogs, and other enemies, using knives, shurikens, nunchakus, and their fists.

Bad Dudes is available for the IBM PC and compatibles and the Atari ST for $39.95. The Amiga version sells for $44.95, and the Commodore 64/128 game costs $34.95.

Data East has also released its first Macintosh game, Super Hang On. It's a global motorcycle race based on the Sega arcade game.

You can ride your motorbike as fast as 160 miles per hour while challenging the unique terrain of each continent. Points are awarded for distance driven, speed, and course completion. You can pick up bonus points for making a perfect run and can even design your own race courses.

This one-player game can be controlled by keyboard or mouse and re...

Super Hang On is Data East's first entry in the Macintosh market.

It requires 512K of memory. Super Hang On retails for $39.95.

Data East, 470 Needles Dr., San Jose, CA 95112
Circle Reader Service Number 208.

Write Some Macros

Users of PC-Write can make use of 100 advanced and alternate commands with a product from Simple Productions called PC-Write Macros. The commands can be assigned to specific keys and used as macros.

PC-Write Macros enables you to reverse the video display, print an address from a letter onto an envelope, instantly set up margins and spacing, and edit with a single keystroke.

The package requires version 3.0 of PC-Write or later. With a printed manual, it sells for $25; the disk alone costs $15.

Simple Productions, 12 E. 15th St., Suite 3, Arcata, CA 95521
Circle Reader Service Number 209.

On the House

For homebuilders, designers, and others who want a source of current house plans, Computer Plan Source has introduced Plan Finder. The program provides the user with a database of floor plans that can be displayed onscreen and also assists in searching for appropriate house designs.

It supports Hercules, VGA, CGA, and EGA graphics adapters and can print the plans on any Epson-compatible printer or HPGL-compatible plotter. All plans are less than a year old and are professionally rendered. For the IBM PC and compatibles, the program lists for $285.

Computer Plan Source, 9603 Flintrock Cir., Dept. PF, Austin, TX 78737
Circle Reader Service Number 210.
Role-Playing

Poof of Radiance fulfills all your gaming fantasies. The legendary ADVANCED DUNGEONS & DRAGONS® role-playing system springs to life on your computer! Embark on dangerous quests in the magical FORGOTTEN REALMS™ game world — made incredibly real by advanced computer animation and combat that adheres strictly to AD&D® game standards. Prepare yourself for the ultimate fantasy role-playing experience!

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Action

Heroes of the Lance gives you non-stop excitement and fully animated action on the mystical DRAGONLANCE® game world. Guide eight Companions, each with different skills, deep into the treacherous ruins of the temple Xak Tsaroth. They will need all of your skills to help them survive the attacks of giant spiders, demons, dragons and countless other terrors. Retrieve the precious Disks of Mishakal if you can!

IBM
C-64/128
AMIGA
ATARI ST

Utility

Dungeon Masters Assistant, Volume I: Encounters is a utility program designed to help Dungeon Masters generate encounters for AD&D® campaigns. It provides more than 1000 encounters, and over 1300 monsters and characters, including all of the monsters found in AD&D® Monster Manuals I & II. DMs can modify the existing data and add original monsters and encounters to the database.

IBM
APPLE
C-64/128

How To Order: Visit your retailer or call 1-800-245-4525. To receive SSI's complete product catalog, please send $1.00 to: Strategic Simulations, Inc., 1946 N. Rengstorff Avenue, Mountain View, CA 94043.

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SUDDENLY, SPACE IS A DEADLY PLACE...

There's no turning back. No place to run—no place to hide. They've destroyed your planet and now they're coming after you. Their destruction is your only chance for survival. It won't be easy, but survival never is.

Don't settle for imitations. Add the arcade classic voted "one of the best home video games ever" by Electronic Game Player Magazine to your video collection.
Now you can blast into one of the hottest arcade space games right in your own home. It's the ultimate inter-planetary combat. You've never seen action like this on your home computer!

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If you want to make your PC explode with action you've got to give it dynamite games. These are the world famous original arcade screamers. Arkanoid™, Alcon™, Bubble Bobble™, Renegade™ and Sky Shark™ will make your PC do things you didn't think were possible.

Everyone knows that arcade games are the benchmark for all other video games and Taito has been an arcade leader since 1953. Since then we've made over 1,000 classics for arcade and home play. Count on Taito to bring the heat of the arcade to your home computer.

Buy Taito products at leading stores everywhere. Visa/Mastercard holders can order direct anywhere in the United States by calling toll free 1-800-663-8067.

Taito® Arkanoid™ Renegade™ Alcon™ Bubble Bobble™ Sky Shark™ are trademarks of Taito America Inc. Copyright ©1988. All rights reserved. IBM and IBM PC are trademarks of International Business Machine. Advertisement by: Qualby & Company, Inc. (Chicago).
Get in touch with the wide, wide world with your computer by your side.

If there is one persistent vision of the electronic world, it's one of a shrinking globe embossed with the snaking connections of computers.

To some extent, the vision has been realized. Call for concert tickets and your request is entered into a local, or sometimes a nationwide, computer system. Go to a travel agent and your air ticket is reserved according to the dictates of a vast computer network. You can even register for college using computers.

The World Through a Wire

Neil Randall
Somehow, though, the dream seems truest at the professional level; only a small percentage of home users join in. But all the home user needs is a computer, a modem, telecommunications software, and a phone line; a wide variety of long-range computer hookups are readily available.

Even so, telecommunicating remains one of the underutilized areas in home computing. There are several reasons, not the least of which is that telecommunicating takes time, a rather scarce commodity for many people. Second, the whole process can be expensive, especially for those who use the professional services. Third, a modem and software, though less expensive now, are still a sizable investment. Most of all, however, telecommunications can be the most intimidating part of computing.

Even the term telecommunications is intimidating. It conjures up visions of a global computer link in which technologically adept people work together on some mysterious, ultramodern project. Once past these visions, the intimidation is perpetuated by the jargon: modem, log-on, baud rate, protocol, buffer, chat mode, scripting, configuration. Few of these terms are household words. There’s even something called Kermit, which until recently was only the name of a very low-tech frog.

To make matters worse, the manuals for telecommunications software have traditionally been about as fun to read as those for Pascal compilers. Terminal settings, file-transfer methods, and duplex choices are but the beginning of the software learning curve. More than most applications, telecommunications software has demanded that you know what you’re doing before you start.

All that is needed, though, is a bit of courage and a reasonable investment of time. Courage because that first log-on is still a mystical experience. Time because one of telecommunications’ guarantees is that things generally don’t work the first time. Once you’re up and running, however, the process soon becomes second nature. Well, close enough.

Where the toll-free number doesn’t apply, you must consider phone access. Heavy users of telecommunications services can run up extremely high phone bills very quickly.

What are my primary interests? Most of the services have a specific focus. The Source, for example, concentrates on business information, while QuantumLink (and PC-Link and AppleLink) are aimed at the casual user. Serve, and Delphi are all general-purpose services. You’ll find descriptions here that will help you decide which service is best for you. You should be aware, though, that you probably won’t use all the features any service offers.

Do I have free connection time available? This is critical, because you will

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### Picking Your Information Service

Before you’re up and running, though, you’ll need to choose an information service. Several are available, and all have strengths. Before choosing, however, ask yourself these important questions:

**Does the service have local telephone access?** Each of the services has a user’s fee of some sort. Over and above that fee, though, is the cost of a long-distance telephone call. In some cases, a toll-free number connects you to the service; in others, a local call does the trick. If you live in an outlying area, however, or in an area where the toll-free number doesn’t apply, you must consider phone access. Heavy users of telecommunications services can run up extremely high phone bills very quickly.

### First, You Need a Modem

Actually, first you need a computer. But all computers have connections for modems, even if some—such as the Macintosh, the Commodore 64/128, and the Amiga 1000—need special adapter cables. Macintosh-specific and Amiga 1000-specific modems are available, but you’ll have more options if you buy an adapter cable and then decide on the modem. Many Macintosh dealers, for instance, reported that Apple’s Macintosh-specific modems are priced too high.

There are two kinds of modems available: acoustic or direct-connect. Acoustic modems tend to be less expensive, and they work with payphones or other phones that do not connect with the standard wall jack. Direct-connect modems, however, have a wider variety of features and are generally more reliable than acoustic modems.

Consider transmission rate when buying a modem. A 300-bits-per-second (bps) modem is quite slow (it will transmit about 30 words per second, for instance), and unless you buy one that’s very inexpensive, it’s rarely worth the slow speed. A 1200-bps modem is still standard for home use, but 2400-bps modems are rapidly catching on. If you can afford a 2400-bps modem—which can also communicate at 300 or 1200 bps—buy it; if not, aim for 1200 baud.

- **Anchor 2400E or 1200E:** 2400 and 1200 bps, respectively; Hayes-compatible; $249.00 and $139.00; Anchor Automation, 20675 Bahama St., Chatsworth, CA 91311
- **Aprotex Minimodem-H:** 300 or 1200 bps; includes communications software; $89.95 (Minimodem-C is a C64/128-specific product); Aprotex, 1071-A Avenida Acaso, Cama-rillo, CA 93010
- **Avatex 2400 or 1200HC:** 2400 and 1200 bps, respectively; Hayes-compatible; $269.00 and $149.00; Avatex, 1230 Oakmead Pkwy., Suite 310, Sunnyvale, CA 94086
- **Delta Gold Voyager:** 300 or 1200 bps; AC/DC power; includes ProComm software; $99.90; Delta Computer, 250 Forbes Blvd., Mansfield, MA 02048
- **167C Modem:** 300 or 1200 bps; connects directly to a Commodore 64 or 128; $149.95 ($79.95 with Q-Link subscription); Commodore Business Machines, 1200 Wilson Dr., West Chester, PA 19380
- **SmartLink 2400 or 1200:** 2400 and 1200 bps, respectively; $199.00 and $99.00; Join Data Technology, 14145 Proctor Ave., City of Industry, CA 91748
- **Smartmodem 300, 1200, 2400:** 300, 300/1200, and 300/1200/2400 bps, respectively; $199.00, $399.00, $499.00, respectively; Hayes Microcomputer Products, P.O. Box 105203, Atlanta, GA 30348
- **Supra Modem 2400:** 2400 bps; Model 2400CM is Commodore 64/128 specific; $219.95; Supra, 1133 Commercial Way, Albany, OR 97321
probably spend your first few hours wandering around the service. Most telecommunications software packages—and some integrated packages—include a coupon for free time on one or more telecommunications services. A magazine ad for the service might offer free hours as well. Keep in mind, too, that you'll have to join the service to use all of its features, even though you might be able to browse without joining.

Do I know anybody who already uses a service? If a friend or colleague is already registered on one of the services, ask for a demonstration (but do not ask for a password—that's a telecommunications no-no). Offer to pay for the online time and—if necessary—the phone call. Once you see how the service works, ask if you can take an hour to run through some things by yourself, again with an offer to pay for the time. At the end of the hour, you will know whether the service is for you.

How much does the service charge? Information services charge in one of two ways. The first is a flat monthly fee, such as that charged by Quantum-Link and PC-Link. More common is an hourly rate, with substantial savings in nonbusiness hours. All services have additional charges for special services, which include online shopping, encyclopedias, and stock information. (Actual charges are listed in each service's section below.) If you plan to use the service for long periods of time, a flat fee will be cheaper than an hourly rate, but if you plan to drop in for short stretches, choose a service that charges by the hour. No matter which price structure, however, watch for minimum monthly charges.

Then, You Need Some Software

Telecommunications software is readily available for all popular computers. The list below highlights an outstanding package (or two, in some cases) for each of the six personal computers COMPUTE! covers. Remember that you can always find some excellent telecommunications software in the public domain. Ask your local user group for suggestions for your machine.

<table>
<thead>
<tr>
<th>Computer</th>
<th>Software</th>
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<tbody>
<tr>
<td>Amiga</td>
<td>Digit (Aegis Development, 2210 Wishire Blvd., Suite 277, Santa Monica, CA; $49.95)</td>
</tr>
<tr>
<td>Apple II</td>
<td>AppleLink-Personal Edition (Apple-authorized dealer; $35.00)</td>
</tr>
<tr>
<td>Atari ST</td>
<td>Flash (Antic Publishing, 544 Second St., San Francisco, CA 94107; $39.95)</td>
</tr>
<tr>
<td>Commodore 64/128</td>
<td>Q-Link (QuantumLink, 8620 Westwood Center Dr., Vienna, VA 22180; 800-392-8200; $9.95)</td>
</tr>
<tr>
<td>Apple II</td>
<td>BobTerm Pro (Progressive Peripherals and Software, 484 Kalamath St., Denver, CO 80204; $49.95/$59.95 for 64/128)</td>
</tr>
<tr>
<td>Macintosh</td>
<td>Red Ryder (The FreeSoft Company, 10828 Lacklink, St. Louis, MO 63114; $80.00)</td>
</tr>
<tr>
<td>MS-DOS</td>
<td>PC-Link (Radio Shack, 1700 One Tandy Center, Fort Worth, TX 76102; $29.95)</td>
</tr>
</tbody>
</table>

Best of all, though, you can find public domain and shareware software to download to your own computer. The selection is staggering in quantity if not entirely in quality. CompuServe has the strongest forums because it has the largest membership and is the most popular service. Every major personal-computer format (and some not so major) is well supported by CompuServe. For Commodore information, Quantum’s Q-Link is the best bet since it’s aimed solely at Commodore users. Although they are relatively new, Quantum’s PC-Link and Apple-Link will likely develop into fine sources of software. GEnie’s machinespecific forums are almost as strong as CompuServe’s; its Apple II and Macintosh areas are particularly active. The Source and Delphi are weakest in machinespecific forums, although The Source seems to be shoring up its offerings lately.

What You Get

Different telecommunications services have a lot in common. All five of those surveyed here, for example, offer news and information areas (though some are more extensive than others). All five let you communicate with other users, and they all offer public domain and shareware software for downloading.

But each service has its own focus. If you’re looking for extensive business news, for instance, you shouldn’t sign up with Quantum. On the other hand, if you’re looking for features designed specifically for Commodore computers, you should give Quantum a try.

Get Specific

Perhaps the most useful part of a telecommunications service, machinespecific forums are often the best place to settle once you’re comfortable with a service. Here you can communicate with people who use the same computer you do. You can get expert advice from experienced users, find out what’s hot and what’s not, and commiserate when hardware doesn’t live up to expectations or software goes south.

Best of all, though, you can find public domain and shareware software to download to your own computer. The selection is staggering in quantity if not entirely in quality.
Generally speaking, every telecommunications service offers a lot of news. CompuServe's News-Weather-Sports area includes the Associated Press Sports Wire, the Associated Press Videotex Wire, the Business Wire, the Executive News Service, the Hollywood Hotline, and the St. Louis Post-Dispatch, among others. Q-Link's News & Information has the latest news, weather, and sports information, but compared with the broader telecommunications services such as CompuServe and The Source, it's limited. GEnie's current-events area includes NewsGrid Headline News, USA Today DecisionLines, press releases, personal computer news, news on FCC proposals, and Fight Back with David Horowitz, based on the TV consumer show. The Source provides news from several press wires, including UPI, AP, and the Washington Post Capital Edition. You can also find Accu-Weather forecasts.

If you're interested in financial information, you won't have to go far—every service offers several kinds of economic news. CompuServe lets you browse through services such as Commodity Market News and Analysis, Earnings & Growth Estimates, and Stock Prices & Volumes Since 1973. You can also find brokerage and banking services on CompuServe, like Quick & Reilly and United American Bank. In Delphi's Business and Finance area, you'll find resources like AP Business News—for general information, government economic figures, the Dow Jones average, and so on—and Japan's Kyodo News—for economic news from Asia and Japan. Delphi also offers stock quotes, a 24-hour investment advisor, and a loan-or mortgage-calculation program. In Quantum's general news area, you can access stock information and an investor's debate board. GEnie's financial area has the Dow Jones News/Retrieval Service, the GEnie Quotes Securities Database, a 24-hour investment advisor, and a loan calculator.

But The Source is where you can find a complete menu of business resources. Options include the Business Update, Investment Data and Analysis, Financial Market Reports, Employment Services, a Business Bulletin Board, and a Tax Reform Information service. Quotes from the New York and American stock exchanges are available, as are information on mutual funds and market indexes, a good portfolio-management system that checks current stock prices automatically, a full mutual-fund analysis service, and an online trading service through Spear Securities.

Each of these services offers an electronic shopping service of some sort (see "Shop Around," in this issue, for more on computerized shopping). You can buy computer equipment, magazine subscriptions, and many other products at special shops and department stores. CompuServe features an extensive mall with special discounts for members. GEnie's mall includes compact-disc stores, coffee shops, and software discounters. It's easy to find the shopping areas on each service.

Most of the services have forums for specific interests, ranging from computers to comic books. Besides the typical computer forums, though, CompuServe offers forums on religion, human sexuality, fish, music, and learning disabilities. You'll have to go exploring to see what else is available—the list is endless. GEnie has, in its long list of forums, a writer's round table, a discussion of the law, a medical group, and a home office/small business area.

For pure fun, telecommunications services offer a wide variety of games, both solitaire and multiple-player, to keep you occupied. You can battle—or join forces with—someone you've never met. CompuServe's repertoire includes Castle Quest, Island of Kesmai, BlackDragon, several trivia quizzes, and some parlor games. Multiple-player games include Air Traffic Controller and MegaWars. In Quantum's Just for Fun area, users participate in games and contests, join special-interest groups, or just chat. From Delphi's Entertainment and Games menu, you can access a wide range of games, including Colossal Cave, Dungeon, Quest, and the French version of Adventure (Aventure). Astrological predictions are available, as are board and logic games. A games group offers a shopping service, hints on 18 adventure games, the Infocom newsletter, and software ready for downloading. Like CompuServe, GEnie offers BlackDragon and Castle Quest. You can also play Hunt the Wumpus or participate in a football pool. GEnie's multiple-player games include Stellar Warrior, Chess, Orb Wars, and PhraseMania!

If you think of yourself as a world traveler, you'll be happy to find features that let you arrange vacations and make flight reservations; they also offer advice for your trip. CompuServe's travel services include the ABC Worldwide Hotel Guide, the American Express Travel Services, the Official Airline Guide, the National Tourism Citilog, and travel-advice areas. Information is even available on aviation weather, forecasts, and aviation safety. Like almost all services, Quantum lets you reserve space on American Airlines flights through EASY Sabre Travel Service. Delphi gives you Travel+Plus, travel news and bulletins, the Official Airline Guide, and a city- and country-travel search service. You can make reservations, order theater tickets, and plan...
several details of your vacation or trip, Delphi even offers travel prizes in its TQ Travel Trivia Contest. One of GE-nie’s more impressive services is its Adventure Atlas, which provides information about a specific style of trip you’re interested in (a cruise down the Nile River, golfing in Mexico, or almost anything else). Other travel features include a ski-resort database, a traveler’s information roundtable, and American Airlines’ EAasy Sabre. Many of the services offer a reference area to help you find answers to those puzzling questions of life. CompuServe’s IQuest provides brief, general information on many subjects, but you’ll also find the Academic American Encyclopedia, MicroSearch, and SuperSite Demographic Information. Quantum also offers the Academic American Encyclopedia in its Learning Center, while GE-nie offers an online version of Grolier’s Encyclopedia.

Electronic Mail

Last, but not least, most services offer electronic mail features that let you keep in touch with users across town or across the country. Delphi’s electronic mail and conferencing capabilities are particularly good examples of telecommunications correspondence. Two different online text editors offer near-word processor-quality features, while its E-mail offers multiple messaging and extensive searching. GE Mail, on the other hand, gives you a fairly simple electronic-mail service, and its LiveWire CB area simulates a CB environment and allows for real-time conferences and several chat modes.

Most of these features are common to each telecommunications service. The trick is finding the service that’s best suited to you. Here are the things that make each service special:

Next, You Learn the Jargon

Like all areas of computing, telecommunications has its own technical terminology. Often it’s not the online services that demand you know the arcane words, but rather, the telecommunications software you buy. Here’s the most common jargon:

ASCII. The standard code used for all computer communication. ASCII files can be read by practically all software, which is why there are ASCII terminal emulations (otherwise known as TTY) and ASCII text files.

autodial. A modem feature that lets the computer dial a phone number automatically. An excellent timesaver when you’re dialing over and over again to get through to the ticket agency.

baud rate. The rate at which data is transferred over telephone lines. Although baud rate is often used interchangeably with bits per second, the latter is more accurate.

buffer. Computer memory set aside to hold information captured from an online service.

download. To transfer data from another computer to yours. The opposite is upload, where you send data from your computer to another computer.

electronic mail, or E-mail. A service that lets you send messages to other users on the same online system or to users on other online systems.

Hayes compatibility. Modems that use the commands originated by Hayes Micro products are called Hayes-compatible. Hayes compatibility is not required for accessing most services, but it is a standard.

ID, or user ID, or user name. The number you receive when you sign on to a service. One of the intimidating factors of telecommunications, it makes many people think of Big Brother. You must know your ID and your password (which you create yourself) to sign on.

log on. Who invented this one? You log on to a system when you dial the number and enter your ID and password. You log off before you hang up.

modem. An acronym from the words modulate/demodulate. A modem is a device that translates computer signals into tone signals (and vice versa) that the phone lines can comprehend.

parity. In the NFL, parity is the guarantee that all teams will be equally boring. In telecommunications, it’s a setting for the error-checking bit during transmission of data. There are several possible parity settings, and your software will let you change them as needed.

protocol. The agreed-upon settings for the transfer of information. XMODEM is the most common protocol, but many others exist. Among them are Y-MODEM, Z-MODEM, CompuServe-B, Kermit, and ASCII. The two computers must agree on parity and protocol if they are to exchange information properly.

terminal. A device that can send information to and receive information from a computer. That’s all a terminal can do. You have to use special software to make your computer act like a terminal.
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Serve's information packet gives you an idea of the features available. In fact, reading the packet is practically a prerequisite to logging on because CompuServe is so large. Its size can force you to rack up a lot of connect-time charges as you figure out where you want to go and what you want to do. If variety and broad scope is what you're looking for, CompuServe is the best service to tackle.

Delphi began in 1982 as the first online encyclopedia service. Since then, it has expanded to include the general features found on such services as CompuServe and GEnie. It's another good alternative for people who want a general service like CompuServe.

Accessible through direct lines, Telenet, Tymnet, or DataPac (in Canada), Delphi charges $7.20 per nonprime hour and $17.40 per prime hour. Unlike most services, modem speed does not affect the connect charge: Users with 2400-bps modems pay the same as those with 300-bps devices. Access through Telenet or Tymnet, of course, incurs additional charges. A few special services cost extra, as well. Frequent users, however, can opt for a Delphi Advantage membership, which carries a minimum monthly charge but a lower hourly fee.

Two special features help to distinguish Delphi. First, a Magazines and Books menu takes you to one of four magazines: Analog Computing (Atari), DirecTions (TI), PCM Magazine, or Rainbow. You can subscribe to each online, or you can read news and communicate with editorial staff. Second, Delphi offers a translation service. You can send electronic mail to the service; have it translated into Spanish, Italian, Portuguese, French, German, or other languages; and then have it forwarded to your destination by electronic mail or telex.

GEnie is CompuServe's closest competitor. In operation since 1985 and rapidly growing, GEnie is a user-friendly service that offers a relatively easy entry system for the new telecommunicator, yet it provides features elaborate enough to suit experienced users.

GEnie's pricing structure distinguishes sharply between prime-time and non-prime-time hourly rates. Between 8:00 am and 6:00 pm Monday through Friday, GEnie's service costs $35.00 per hour, but at other times the rate drops to $5.00 per hour. Charges apply to both 300- and 1200-bps connections, with a $7.50 hourly additional charge for 2400-bps users. Registration on GEnie costs $29.95 and gets you the GEnie manual and two free hours of connect time.

QuantumLink has expanded to include Apple and MS-DOS users. Actually, Q-Link, AppleLink, and PC-Link are three separate services, each available only to owners of the specified machine. Because of this exclusivity, Quantum's services are able to provide machinespecific graphics and keyboard control. What this means is that the Quantum services are probably the least intimidating option. All you need to do is boot up the software for your machine and then follow the prompts to sign on for the first time. After that, simply booting the disk automatically logs you on. There are no identification numbers or passwords to memorize and change.

Coupled with this convenience is Quantum's reasonable fee structure. Basic service for Q-Link and for PC-Link is a flat $9.95 per month, with specialized services adding a bit more. AppleLink doesn't use a flat-fee approach but instead charges by the...
If the source were to concentrate 15 minutes to complete, while each of Neil Randall teaches at the University of Waterlooin Ontario, Canada, writes frequently about computer concerns, and needs another phone line into his home. 

The Source was one of the earliest information services available, and it remains one of the most respected because of its focus on financial information. So strong are The Source"'s ties with financial users, in fact, that the service is still largely perceived as being oriented toward the business user, not the general consumer.

Over the past year and a half, however, The Source has made considerable strides toward becoming a full-featured service. It remains among the best—if not the very best—for serious financial users, but its entertainment, shopping, and education areas are growing rapidly.

You can access The Source through surcharged WATS numbers, local phone numbers, Telenet, or—in Canada—DataPac. Current usage rates are $21.60 per prime-time hour at 300 bps, $25.80 at 1200 bps, and $27.60 at 2400 bps. Non-prime-time hourly rates are $8.40, $10.80, and $12.00, respectively. Certain options have additional charges. Members are charged a minimum of $10.00 per month, a fee applied against the first $10.00 of chargeable time.

Considering its reputation as a service for the advanced user, it's somewhat surprising that The Source offers the best online tutorial of any service. Completely free, the tutorial consists of two sections, one dealing with the basics of moving through the service and the other offering detailed instruction in how to use the Communications services, the Business and Investment services, or the Travel services. The first section takes roughly 15 minutes to complete, while each of the other three takes 20 minutes. By the time you've worked your way through the tutorial, you won't have any trouble using the service.

If The Source were to concentrate its efforts on entertainment, special-interest groups, and shopping services as well as it has on its news and financial areas, it could become the best overall service available. For now, it's the service of choice for business users who want more than Dow Jones News/Retrieval (a financial online information service) has to offer. For those wanting entertainment and socializing, though, The Source is not yet first choice.
Sit down and grab on! You’re driving the fastest and most beautiful machine on 4 wheels! So kick up the engine revs, down-shift the gears, hear the tires squeal and grab the pavement—on your computer!

Hot car. Hot music. Hot scenery — beaches, cities, snowy mountains, deserts and the blonde next to you will tempt you to take your eyes off the road. At close to 300 KPH, our advice to you is a 4-letter word. DON’T.
UNLEASHES ARCADE ACTION ON YOUR HOME COMPUTER!

Out Run. One of the biggest arcade hits ever, and the ultimate motor-sports simulation. Now you can bring the action home! With 4.4 liters under the hood, you're driving a beast of a machine only top drivers attempt to drive. Can you handle it? Maybe. Maybe not.

Space Harrier. You are Harrier, the extra-terrestrial warrior. Space is your battlefield. Your mission is to save the Land of Dragons from the vicious followers of the vile one-eyed mammoth. Grab your laser blaster because this game is 100% action, non-stop clashes, powerful combat scenes.

Alien Syndrome. Genetic lab overrun by hideous organic mutations! Scientists captured! Activate the lab’s self-destruct mechanism! Break in and blast away the slimy hordes and the biggest, most grotesque mutants guarding the doors. Can you do it before the bomb explodes?

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Screenshots represent Atari ST Version, others may vary.
Maybe you like to fly on your computer. You're a high-tech Walter Mitty strapped into the cockpit of an F-19, rolling out at Mach 3. Or maybe you like the sea. You run silent, run deep. Maybe you like the outreaches of space or the fantastic maze of a dragon's lair.

But I want to drive.

Buckle me into the close confines of a Lamborghini Countach and hand me the keys. Tighten the lugs on my Formula One fireball and tap on my helmet. Outfit my pickup for a grueling run across the Baja, or send me on a midnight spin up a stretch of twisting mountain road, 500 horses screaming under the hood, a hundred pounds of rubber crying for mercy. It's the stuff of dreams.

Hit the Road, Jack

Driving high-performance cars is a risky business that takes agility, quick thinking, nerve, and lots of money. Whether it's a $50,000, street-legal roadster or a $1 million Grand Prix motorcar, if you've got the itch, you'd better have the scratch. Thanks to a handful of software developers, though, you can climb behind the wheel of your computer for a whole lot less.

You're sure to find a driving game that meets your taste: high-scoring, quick arcade action; realistic racing-circuit simulations; dragsters; dirt scrappers; modified stock cars; and the crown prince of road racing, the Formula One.

Few names are as synonymous with Formula One racing as Ferrari, a fact not lost on game makers. From Ferrari Grand Prix to Ferrari Formula One, this high-speed, corner-hugging, five-gear, Italian rubber-burner is making a name in the software driving-simulation circuit the same way it did on the tracks of Monaco and Detroit.
Ferrari Fandango

On the Macintosh, Ferrari Grand Prix promises edge-of-the-seat excitement with its superbly realistic-scale speed. You'll swear you're really moving. Using fast frame rates and limiting the background graphics, this simulation boasts some of the smoothest action around.

Although the background is limited, it's no throwaway. Besides, when you're sitting low in the cockpit of a Ferrari racer moving around a curve at 175 mph, your attention had better be on the road. But you can glance at lap and speed information displayed conveniently below the steering wheel at the bottom of the screen.

Several game options give you some control over how you run your race. You can, for instance, modify your gear ratios to get more top end or change your two computer opponents' skill levels to Great or Good. You can design backgrounds for your track and, in an interesting departure from other driving simulations, you can design your own racetracks.

If there's a hitch to Ferrari Grand Prix, it's in using the mouse. It's tough to control your car with a mouse. The manufacturer, Bullseye, says the game works well with a joystick, so you may want to go that route if possible.

Experienced mouse users probably won't suffer so much from the mouse-steering dilemma, and if their mouse is hooked to an Amiga, they can warm their engines to the sound of Ferrari Formula One. Electronic Arts really pushes the envelope with this simulation, exploiting the Amiga's sound and graphics to put the entire Grand Prix-circuit experience on your desktop.

For most racing-game enthusiasts, driving is the bottom line. They want to wring that redline for all it's worth, double-clutching the curves and hitting the straights flat out. But the real racing circuit is comprised of modifying, testing, and qualifying the team's car before it makes its charge for the winner's circle. Ferrari Formula One is a pretty successful attempt to capture all the elements that go into making a world champion.

From the test track of Fiorano, Italy, to the Australian Grand Prix in Adelaide, South Australia, take your Ferrari through its paces as you fine-tune everything from fuel mix and tires to suspension and wings. As you follow the racing circuit around the globe, allow ample time for testing and qualifying. Blow an engine and you're out of the race. Blow a curve and you could be out for the season.

This game requires patience, time, and imagination. You'll have plenty of opportunities to experiment with the intricacies of your car, just as a Grand Prix racing team would. Once you take to the road, the Amiga's graphics-processing power gives you pretty smooth operation—assuming you can control the mouse, shift gears, brake, and steer while keeping one eye on the other cars and the other on the track. If you want the World Driving Champion trophy, you've got to earn it. Nobody said it would be easy.

And the Amiga's digitized sound makes motors roar, tires squeal, and air wrenches sing. You'll be looking on your hands for oil stains. The sound effects are leagues ahead of the two-tone warble of an IBM PC or compatible computer and easily outclass the loose-lipped Bronx cheer of a nondigitized Macintosh.

Switching Gears

If you're tired of Ferrari, Accolade's Grand Prix Circuit relieves some of the doleful atmosphere by offering two other choices: a V-8 Renault six-speed road hugger and a six-speed Honda Turbo that's only a little slower than a lightning strike. Like its Ferrari Formula One cousin, Grand Prix Circuit takes you through a simulated racing season, albeit a shorter one. The emphasis here isn't on the work behind the scenes as much as it's on driving performance.

You get into the action quickly with practice laps and then move on to qualify and race on any of eight tracks. Keep your eye on the tachometer so you don't blow your engine, and watch the other nine drivers who share the two lanes of asphalt. Some are quick, clean racers who ride the groove as well as Jackie Stewart ever did; others are slow, clumsy road hogs who'd be more at home on farm tractors.

Options in Grand Prix Circuit are limited to more arcade-type modifications than those offered with Ferrari Formula One. You can choose skill levels, length of race, and a particular track (if you don't want to run the whole circuit). The background graphics are a knockout on an EGA-equipped PC, though they can be disconcerting, shifting around boxlike
as you steer around a curve or another driver.

The same design team brought out Test Drive two years ago, which also leans more toward arcade action; you'll come across the same passing situations and tight squeezes time after time. The goal is to get to the top fast, and there's just one way to do it: Put the hammer down, fuse your foot to the clutch, and don't worry about that cliff to your left.

From the stock Corvette to the Lotus Esprit Turbo, Test Drive's five exotic cars are built to move. They are quick out of the gate, slip lanes like butter in a frying pan, and cling to the curves like lint to a cheap suit. Each comes equipped with a radar detector, which flashes and beeps when you move through a speed trap at 105 mph. If Smokey appears in your rearview mirror, you have two choices: Pull over and take a speeding ticket or kick it up a notch and leave him chewing dust.

Test Drive, like Grand Prix Circuit, suffers from a background that shifts like Los Angeles in an earthquake, but to a lesser degree. Because the game is fashioned on a vertical-scroll model, there's not as much detail to bog it down. Like Grand Prix Circuit, it's best to run Test Drive on a Tandy 16-color or EGA-equipped computer instead of in CGA; otherwise, you'll end up driving a purple car up a blue mountain. It's enough to make you carsick. You could drive in Hercules graphics mode of course, but only as a last resort. Both games suffer from the poor sound capabilities of the IBM PC and compatible computers, and, although both support joysticks, you'll get better control from the keyboard.

Off the Beaten Track

Barring a steering wheel modeled after the yokes sold for flight simulators, a joystick is the most natural control for a driving game. Unfortunately, the games that make the best use of joysticks are those furthest removed from the realities of driving and racing. Racing enthusiasts who thrill to the chase may be disappointed in games like Crazy Cars from Titus, but they can still find some elements of real driving in 4 × 4 Off-Road Racing from Epyx.

Crazy Cars is flat-out full-tilt arcade action. It emphasizes points, and it's not hard to rack up 5 million points after only 10-15 minutes of play. The game's context is a set of races (they're not races as much as weaving contests) in places like New York, Arizona, and the space shuttle launch pad at Cape Canaveral. The object is to hit the finish line first so that you can move up to a faster car. You start with a Mercedes 560 SEC and climb to a Porsche 911, then to a Lamborghini Countach, and, finally, to a Ferrari GTO.

The cars are represented realistically onscreen, but that's where the real world ends. Unlike the black asphalt you find in the top-of-the-line simulations, in Crazy Cars you drive on a striped ribbon that floats eerily over a spray-painted field. This game takes the idea of minimal background graphics to the extreme, even on the Amiga version. Depending on where you're driving, the horizon can be a skyline (the George Washington Bridge in New York) or landscape (brown buttes in Arizona), but even at speeds over 100 mph, you never get any closer to the things you see on the horizon. And don't forget the sky, which in the Amiga version is a series of horizontal blue stripes of different hues.

With its fantasy-world graphics and predictable patterns, Crazy Cars offers little to those who want the thrill of real racing action. Epyx improves the situation with its 4 × 4 Off-Road Racing by mixing arcade action with simulated racing preparations. Although not nearly as complex as Ferrari Formula One, 4 × 4 gives you the chance to customize your rig for a race over any of four terrains. This game gets you out of the garage and into the race without requiring too much technical expertise. It's enough to know you should bring some spare tires, tools, and a few extra parts.

Once on the road (or off the road, to be more exact), the game resists to arcade-style play. Your path is strewn with boulders, holes, and other assorted obstacles. Along the way, you can pass your computerized opponents. One of your rivals, called the Doombuggy, is a highway hit man who drives like a reject from The Road Warrior. The only reason he's in the race is to put you out of it. If you damage your vehicle, you can pull into a checkpoint for repairs, and you may want to gas up before heading back.
into the race.

The four races in 4 × 4 Off-Road Racing are pretty similar, differing mainly in color—another bow to the arcades. The Baja is light brown, Death Valley is yellow, Georgia is dark mud-brown, and wintry Michigan is—you got it—snow white. The sound on the Commodore 64/128 resembles a running motor, with splash sounds when you hit water. It's not state of the art, but it's better than silence.

**Home Stretch**

Games like Crazy Cars and 4 × 4 Off-Road Racing aren't designed as full-fledged driving simulators, and whatever shortfalls they have should be considered with that fact in mind.

Bona fide driving simulations like Ferrari Grand Prix and simulation arcade mixes like Grand Prix Circuit come much closer to matching the true racing experience. Every computer user interested in cars will find a favorite driving game to capture the spirit of the moving road.

There's still plenty of room in the driving-game field for innovative products. A game modeled after the Daytona 500 would please stock-car fans, especially if it incorporated some of the intricacies of racing preparations and featured realistic crash graphics that would add tension to the oval track. Another overlooked possibility is a Demolition Derby simulation filled with Detroit dinosaurs. There's nothing quite like ramming the back end of a '67 Chevy Impala into the grill of a '64 Ford Galaxo. Or maybe someone will model a game after great movie car-chase scenes—imagine driving Steve McQueen's Mustang in Bullitt, or chasing the French Connection through the streets of Manhattan, à la Gene Hackman.

Figure-eight dirt tracks, quarter-mile drag strips, curving Grand Prix roadways, asphalt ovals—all of them form the racing arena. No matter if you're a weekend cruiser, a Monday-morning motorhead, or a pedestrian who doesn't know a piston from a pipe cleaner, your search for some pulse-quickening excitement can start at your neighborhood software store. Let your computer put you in the driver's seat.

Peter Scisco is an assistant editor with COMPUTE! and doesn't make enough money to drive a real Ferrari.

---

**Drive Like a Demon**

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</tbody>
</table>

†Trademarks of their respective manufacturers.

*Unlimited based on RAM memory and disk space available.
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**Buying Your First Computer**

Gregg Keizer

Choosing your first computer is serious business. Here are three picks that won't do you wrong.

**IBM PS/2 Model 25**

IBM's low-end PS/2 is the modular-looking Model 25, an excellent choice for the first-time computer buyer eager to work beneath the famous blue logo. The computer's cubelike appearance is marked by an all-in-one monitor and system case that sits on the desk at a slightly tilted angle for easy screen viewing. Typing on the full-size, detachable, 84-key keyboard is a pleasure—the keys have a nice, firm feel and make a satisfying click when pressed. On the downside, the small keyboard is much too large for dinky desktops. An even smaller keyboard would be a welcome option.

Unboxing and setting up the Model 25 is a breeze. Put the system/monitor on the tabletop, connect the keyboard cable, and plug the power cord into the computer and an outlet. The computer itself takes up a surprisingly small piece of desktop real estate: about 15 × 13 inches.

Open the case and you'll find an Intel 8086 8-MHz microprocessor, 512K of RAM (expandable to 640K), and two expansion slots that take one full-size and one short PC XT-compatible card. On the back are a serial port, parallel port, earphone connector, keyboard connector, and connector for the optional mouse. At the front, just under the monitor, are the power switch and one 3½-inch disk drive (another can be added).

The Model 25 can sport either a monochrome or a color display. The color version uses MCGA (Multicolor Graphics Array) mode, which offers 256 colors in 320 × 200 resolution. The monochrome model is no slouch either: It can put 64 shades of gray on the screen.
Model 25 buyers have the entire MS-DOS productivity software library to choose from. And though the 3½-inch disk format excludes older programs (which probably are available only on 5¼-inch disks), more software is appearing on the smaller-size disks. There’s plenty to get a first-time computer user started, including the top integrated packages and business applications.

The Model 25 also makes sense as a student’s computer, especially for high schoolers and collegians who have need for MS-DOS applications in business and finance classes. And the machine’s rugged all-in-one case should keep it running even after the umpteenth move.

As a home computer, the Model 25 has much to offer, but it’s not the first choice. The computer’s price takes it out of the reach of many potential buyers. Entertainment and educational software is heading into the MS-DOS market, but many packages run only in the crude CGA (four-color) graphics mode. When more software supports the 25’s MCGA graphics, the computer will become a better pick for those wanting to entertain and educate in the home.

Apple IIc Plus

The Apple IIc Plus is the newest Apple II, and though it’s more a reworking of an ancestor (the IIc) than a brand-new model, it has many things to recommend it to the first-time computer buyer.

A petite computer, the Apple IIc Plus’s design puts the keyboard and the computer in a case measuring a mere 12 x 12 x 2 inches. When propped up on its handle, the IIc Plus rests at a comfortable typing angle. The 63-key keyboard feels solid, although it doesn’t have enough tactile and audio feedback.

Inside the computer is a 6502 microprocessor that can run at the Apple II’s traditional speed of 1 MHz or at a more respectable 4-MHz speed. The faster speed is one of the machine’s more impressive features. The IIc Plus also boasts 128K of RAM, two serial ports, a mouse port, an external disk drive connector, and two video connectors. All this precludes most add-on boards—a good thing, considering that the computer is a “closed” system (not designed for later expansion). A built-in 3½-inch disk drive rounds out the computer’s features.

You can connect a monochrome or a composite color monitor to the IIc Plus (or even a television set with an optional RF modulator). And since the IIc Plus supports traditional Apple II graphics modes, including the acceptable but not dazzling 16-color double-hi-res mode, color is an integral part of its software.

Entry-level computers like the IIc Plus should have entry-level prices, and the IIc Plus doesn’t disappoint.

<table>
<thead>
<tr>
<th>Software Format</th>
<th>PS/2 Model 25</th>
<th>Apple IIc Plus</th>
<th>Tandy 1000 SL</th>
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<td>Price</td>
<td>$1,350 (monochrome) $1,695 (color)</td>
<td>$675</td>
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<td>CPU</td>
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<td>Serial (2) Joystick/Mouse</td>
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</table>
The Tandy 1000 SL is a bargain for buyers looking for PC compatibility.

It's the least expensive Apple II around, an important point to anyone concerned with the bottom line and the benefits of home computing. If you have kids at home and in school, Apple's entry-level computer makes the most sense as your first home machine. The computer's small size and easy setup make it practically kidproof.

Even if your child's school doesn't use Apple II's, the computer's impressive library of educational software—still second to none—makes it the choice for home education. And if your local schools do use Apple II's, your children will be able to use the same software at home that they're familiar with in class. Although the majority of Apple II software is in the older 5¼-inch size, many of the best-known and best-selling packages now come in 3½-inch versions.

If you're looking for more than an education computer, don't discount the Apple IIc Plus. Apple II software may not have the breadth and depth of MS-DOS, but several excellent applications, notably the venerable AppleWorks, can complete most productivity tasks.

Tandy 1000 SL
It may not be a bottom-end computer, but the Tandy 1000 SL is sure priced like one. This compact IBM PC compatible is the least expensive Tandy computer that also features substantial expansion capabilities. Its built-in features, however, are what make the machine the perfect choice for first-time computer buyers eager for MS-DOS but put off by IBM's prices.

Measuring just $15 \times 13$ inches, the 1000 SL comes with a 101-key detachable keyboard that's actually wider than the computer. Although it's an improvement over previous Tandy keyboards and it gives good audio feedback, it still feels mushy. The monitor, a separate buy often bundled with the SL during Radio Shack sales, sits on top of the computer.

Like that of the other two first-time computers, the SL's setup is a snap. Computer and monitor power cords and monitor and keyboard cables are all you have to contend with. The inclusion of DOS 3.3 and Tandy's own DeskMate interface shell in the SL's ROM helps immeasurably in getting first-timers going.

Inside the computer, you'll find 384K of RAM (expandable to 640K), an 8086 microprocessor that runs at either 4 MHz or 8 MHz, a 5¼-inch disk drive, a serial port, a parallel port, two joystick/mouse ports, and five slots that take PC XT-compatible cards.

Equip the SL with a Tandy color monitor, and the SL's enhanced CGA mode sports 16 colors, not the usual 4. Monochrome is compatible with the Hercules standard for crisper screens. It's possible to use more advanced graphics modes, but you'll need to slip a card into one of the SL's slots.

Interested in computerizing your business in the office or at home? The Tandy 1000 SL makes sense because of its attractive pricing and because of the tremendous selection of MS-DOS business software. Although the measly 384K of RAM and single 5¼-inch disk drive aren't enough for full-featured business applications, you can add more memory to the motherboard and increase the storage with another disk drive, a hard disk, or a hard disk card.

The 1000 SL is a strong contender for home education and entertainment. Its 16-color mode enhances learning and gaming programs far above and beyond CGA-equipped PC compatibles, and its 5¼-inch disk drive opens up a wider software selection than does IBM's Model 25. Add the DOS and DeskMate interfaces in ROM, bundle in the integrated DeskMate applications, and the life of a first-time computer owner becomes a lot easier.

**You Win!**
No matter which of these machines ends up on your desktop, you can rest assured you've made a good choice. All come from solid companies long-involved in personal computing. That's important to the first-time computer buyer—nothing is worse than buying a computer and seeing its support (and its manufacturer) sink away.

Each machine has its strengths and weaknesses, and each has a significant software base. You're not taking much risk buying one of these computers; your caution will steer you toward a solid relationship with home computing.

After all, you don't want your heart broken by a whirlwind computer romance, do you?

Gregg Keizer is editor of COMPUTE! magazine and remains a first-time computer buyer at heart.
Crowded parking lots? Forget 'em. Pushy salespeople? They're history. Try shopping from home with your computer for a sane solution to mall madness.

Remember the crowds at the mall in December? Remember following thousands of other shoppers like lambs to the slaughter, lemmings to the sea? You couldn't take a left turn out of the shopping center because of the traffic, and you paid $2.00 for an ice cream cone that ended up on the floor.

Now's probably not a good time to tell you this, but you could have done most of your shopping from your trusty computer keyboard. Every major telecommunications service sponsors an electronic shopping center with plenty of parking, polite salespeople, and cheap food.

If you think that the wares might be too obscure or the prices too high, you're wrong. You can find Levi's jeans, Godiva chocolates, Penguin books, and more. You can also find Alaskan reindeer sausage, which, for most of us, falls squarely into the obscure category. Prices are reasonable, too—just what you'd expect to find at a traditional mall. Those Levis, for instance, cost about $22.50; the Godiva chocolate runs $3.75 for a two-ounce bar; and you'll pay $3.95 for a Penguin paperback. And the reindeer sausage? How about $7.50 for 12 ounces?

Check Out the Checkout

Different telecommunications services have different stores; so, prepare for your first shopping trip by learning what shops are in which mall. CompuServe, for instance, has Bloomingdale's, but GEnie and Delphi don't. Most of the services have a coffee shop, a CD store, and some bookstores.

In publications like CompuServe's Online Today and GEnie's LiveWIRE, advertisements and features tell what stores are available. Try to locate a winter issue because the shopping coverage is extensive during the holiday season.

Once you know what kind of stores are in the mall, you can start thinking of reasons to go shopping. Do your parents enjoy exotic coffee? Is there a compact disc player in your house? Do you have a friend who will read anything about cats? Don't be too specific as you list items to look for. You may not find the latest effort by Bruce Springsteen or Jackie Collins, but you'll likely find a collection of New Age music, and you could stumble into a gold mine of British mysteries. Leave yourself open to possibilities and you won't be disappointed.

To help in your search, you can order catalogs from most of the mall merchants. You could, in fact, devote one shopping trip to ordering catalogs from the stores that interest you. Then, after you've browsed on paper, log on and place your order. Using catalogs will save you online charges because you won't spend all your computer time looking for that perfect gift.

Now that you know what you're looking for, grab a piece of paper, a pen, your charge card, and any address information you might need if you're buying a gift for someone else. Turn on your computer and log on to your favorite telecommunications service. CompuServe has the most variety, but the other services also have tempting wares, and new shops show up all the time. After you've found the mall, look for an index to the stores.

Let's say, for example, that you've decided to get a book for your friend who lives in another state. You can locate the bookstores by looking through an index organized by categories. Or, if you know the store where you want to shop, you can often look for it in an alphabetical list or even perform a search.

Once you're in the bookstore, peruse the collection. You might find prices listed with the titles, but sometimes you must ask for more detailed information to get the price. Ordering and paying for a book or any other item is a menu-driven process. Type in all the pertinent information—everything from title and quantity to your billing
address and shipping addresses. Up to this point, you haven't committed to buying anything. The service will ask you to check the information and to verify your purchase, and you'll be given a confirmation number, which you'll use if you need to check on the order later. Once you leave the store, your order is final.

Now, just sit back and wait for the package to arrive.

Caveat Emptor

What happens if you order a cashmere sweater and Brooks Brothers' idea of size 9 is different from yours, or the dyed-in-the-wool blue doesn't match the dyed-in-your-imagination blue? Can you return unsatisfactory purchases?

While the electronic malls don't guarantee satisfaction, many of the merchants do. Shops usually have an "About Our Store" section where you can find payment and return policies. You can also contact the merchant if you have problems with your purchase. It's especially important to check on these policies before you order anything because the shops aren't required to provide guarantees.

Also, check on shipping and handling charges. They aren't standard from merchant to merchant, and these hidden costs can boost the price of items you want to buy.

What's the Catch?

The selection is good, shopping is easy, the prices are fair, and many stores guarantee their products. So why would you ever go shopping in a real mall again? For one thing, you can't window-shop in an online mall; there isn't anything to see through the windows. Malls without walls rely on text to convey product information, so you really need to know what you're looking for before you log on. You definitely should avoid buying products you don't know much about. Remember the sweater that didn't fit? If all you know about a cashmere sweater is what you read in the store's menu, you're taking a chance that you'll get something you didn't expect. But you don't have to see a CD of Beethoven's Eighth Symphony before you buy it, so an electronic store is probably just as safe a gamble as your local record shop.

Another drawback to online shopping is the connect-time expense. GEnie, which is a fairly inexpensive telecommunications service, charges about $5.00 per hour at night. Even if you must pay for parking at your nearest mall, it probably doesn't cost $5.00 per hour. If it does, make one more trip to the shopping center and buy a modem.

Some shops offer free connect time, especially during the winter holidays. Look for these specials as you meander through the mall because they'll save you a lot of money.

Things to Come

Right now there's no good way to avoid the cost of wandering around the electronic mall. In the future, businesses may create their own services and let you log on for free to place orders from their catalog or just to browse.

With more powerful microcomputers and higher-resolution monitors, you may one day be able to see the actual products onscreen. With the addition of 3-D graphics, high-quality sound, and a hypermedia interface, online shopping could impart more information than paper catalogs. Imagine a men's shirt displayed in color on your computer screen. Position the cursor over the neck of the shirt and press Return; the computer lets you enter your neck size. Select the front pocket and the computer shows you a close-up of the careful stitching. Request other colors. Request care instructions.

Someday, shopping by computer may become the mode of choice for those of us who were born to buy. No parking hassles, no crowds—just a leisurely stroll through electronic aisles, the jingling of coins in our pockets replaced by the tapping of keys on our keyboards. That day is still to come; right now, it's still an expensive way to shop.

Heidi E. H. Aycock is an assistant editor with COMPUTE! who loves to shop any way she can.
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PAGE 2 OF 4
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- 640K, Expandable to 1MB
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- Parallel Printer Port
- RS232 Serial Port
- Clock Calendar with Battery Backup on Board
- 101 Key Keyboard
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| Tac 3 | $9.95 |
| Tac 2 | $10.95 |
| Tac 5 | $12.95 |
| Tac 1 + 8MB /AP | $26.95 |
| Black Max | $10.95 |
| Boss | $11.99 |
| S-Way | $19.99 |
| Bultah | $16.75 |

---

**Why shop at Lyco Computer?**

Lyco Computer is one of, if not the largest, and most established firms to provide only quality name brand computer products at prices 30% to 50% below retail. We've set many industry standards, and we are setting the pace for more in the future. Our standards include: a separate department for customer service; a price guarantee; guaranteed factory fresh merchandise; diverse payment and shipping policies, including a C.O.D. policy which allows customers to have products in their hands before paying anything. Selection places Lyco at the forefront of the industry. Due to our in-stock volume, we cannot advertise all of our products. If you do not see the product you want advertised, call Lyco Marketing toll free.

---

**How do I know I will get the product I need?**

Our marketing staff is well-educated in the computer industry. They receive continuous formal training by our manufacturers which enables them to develop and maintain a high degree of expertise on the products they represent. Through our strict guarantee on providing only new merchandise prohibits free trial periods and a guarantee on compatibility, a wealth of knowledge is available to our customers to help with the purchasing decision. As thousands of people every week capitalize on our savings and services, we hope you too, will make Lyco Computer your first choice.

---

**What about warranty or service?**

We decided several years ago that a Customer Service Department was needed in the industry. Unfortunately, few of our competitors offer this service. Our Customer Service Department is available at (717) 494-1670 to provide assistance in all warranty matters. Our product line enjoys "name brand recognition," and we back all of our manufacturer's stated warranty terms. Many manufacturers will allow defective products to be exchanged. Before returning any item that appears to be defective, we ask that you call our Customer Service Department to assist you in determining if the product is defective. If the product is determined defective, they will give you a special authorization number and expedite processing of your order.

---

**Will you rush an item to me?**

Since 1981, we have set the standard in the industry by processing orders within 24 hours—not 4 to 6 weeks. We offer next day air, two day air, standard UPS, and postal international shipping services. Our records show we fill 95% of our orders daily. Temporary shortages are normally filled within 10 days. If an order cannot be filled within 60 days, we refund your money in full, unless you choose to wait for the order and benefit from the price savings. Any time prior to shipment, you may cancel or change the out of stock product by contacting our Customer Service representatives.

---

**How do I order?**

Send your order to Lyco Computer, P.O. Box 5088, Jersey Shore, PA, 17740, or call 1-800-233-8760 or (717) 494-1030. We provide four payment methods. We have always accepted C.O.D. orders through UPS. Prepaid orders over $50 are shipped freight-free in continental U.S. For orders under $50, please add $3 for freight. Orders prepaid by a certified check or money order are shipped immediately. Personal and company checks require a 4 week waiting period prior to shipping. Visa and MasterCard Card orders are accepted for your convenience, but we respond pass along the 4% discount offered for cash. Prices advertised are cash prices. Purchase orders are accepted from Educational Institutions. We only charge sales tax on items delivered in Pennsylvania. For APO, FPO, and international orders, please add $5 plus 3% for priority mail. Advertised prices and availability are subject to change. Not responsible for typographical errors.

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"You might use your car for pleasure, but insuring it is a business decision."

RAYMOND BURR

Here's why... With the cost of auto insurance, particularly with two or more cars, you must make informed decisions. The right insurance company with the right coverages, with the proper limits at appropriate rates. Those are business decisions that require the advice and counsel of an Independent Insurance Agent. We represent several fine companies...not just one...so you choose the right policy at the right price, with the right service. An Independent Agent—always a good business decision.

INDEPENDENT INSURANCE AGENTS OF AMERICA

...and the insurance companies they represent

INCORPORATED
Telecommunications Software

Want to connect your computer with others across the country? Want advice from experts? Want to shop from home or download software? Then get yourself some telecommunications software so you can log on to one of the hundreds of services or bulletin boards around the world.

Check out your software choices in this gridlike comparison chart. Here, you'll find information about the important telecommunications software features—from protocols and terminal emulation to price and special requirements. In short, this chart lists all the details you need to choose the right telecommunications package.

Caroline D. Hanlon

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<thead>
<tr>
<th>Software</th>
<th>Computer</th>
<th>Price</th>
<th>Company</th>
<th>Computer Compatibility</th>
<th>Error-Correcting Features</th>
<th>Terminals Supported</th>
<th>Telephone Line</th>
<th>Script Language</th>
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<td>VT100, IBM 3279</td>
<td>300, 1200</td>
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<td>MicroPhone 1.5</td>
<td>Software Ventures, 2007 Claremont Ave., Suite 200, Berkeley, CA 94705, (415) 664-3232</td>
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<td>XMODEM, YM0DEM</td>
<td>VT102</td>
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<td>Mirror III</td>
<td>SoftLine Distributing, Suite 100, 237 Office Plaza Dr., Tallahassee, FL 32301, (904) 879-8564</td>
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<td>IBM PC and compatibles</td>
<td>256K, DDS 2.0 or later</td>
<td>XMODEM, YM0DEM, Kermit, Crosstalk, Hayes, ACT Compressor</td>
<td>DEC 220, Wyse 50, and more</td>
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<td>MiTerm 4.0</td>
<td>MicroTerm, 515 E. Telegraph Rd., Pontiac, MI 48053, (313) 334-5700</td>
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<td>512K and GEM (IBM)</td>
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<td>MouseTalk</td>
<td>United Software Industries, 8399 Topanga Canyon Blvd, Suite 201, Canoga Park, CA 91304, (818) 687-5800</td>
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<td>Apple II and IIgs</td>
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<td>Online Platinum Edition</td>
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<tr>
<td>Paint-to-Point</td>
<td>Pinepoint Publishing, 5665 Doyle St. #112, Emeryville, CA 94608, (415) 654-3050</td>
<td>$129.00</td>
<td>Apple II, enhanced II, IIgs</td>
<td>128K, ProDOS</td>
<td>XMODEM, Binary II</td>
<td>VT52</td>
<td>300-9600</td>
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<tr>
<td>ProComm M</td>
<td>Prometheus Products, 7225 SW Bonita Rd., Tidewater Park, CA 92223, (503) 624-0571</td>
<td>$49.95</td>
<td>Macintosh</td>
<td>512K</td>
<td>XMODEM, Macbinary</td>
<td>VT52, VT110</td>
<td>2400, 9600</td>
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<tr>
<td>ProComm</td>
<td>Datastorm Technologies, P.O. Box 1471, Columbia, MO 65205, (314) 474-8461</td>
<td>$50.00</td>
<td>IBM PC and compatibles</td>
<td>128 K</td>
<td>XMODEM, XMODEM, Kermit, CompuServe B, Telix, Modern 7, Windows XMODEM</td>
<td>VT52, VT110, VT102, IBM 3101, Televideo, IBM 3200, Televideo 920, Televideo 955, Televideo 960, Lear Siegler ROM 3.5/5, Adds Viewpoint, WYSE 100, Heath/Zenith 19, ANSI X3.64, TTY</td>
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<td>ProComm Plus</td>
<td>Datastorm Technologies, P.O. Box 1471, Columbia, MO 65205, (314) 474-8461</td>
<td>$89.00</td>
<td>IBM PC and compatibles, PC/2</td>
<td>192K</td>
<td>XMODEM, XMODEM, Kermit, CompuServe B, CompuServe Quick B, Telix, Modern 7, Windows XMODEM, SeaLink, XMODEM, YMODEM-G</td>
<td>VT52, VT110, VT102, IBM 3101, Televideo 900 series, Lear Siegler ROM 3.5/5, Adds Viewpoint, WYSE 100 and 50, Heath/Zenith 19, ANSI X3.64, IBM 3270, TTY</td>
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<td>ProTerm 2.1</td>
<td>Checkmate Technology, 500 S. 87th Rd. Tempe, AZ 85281, (602) 966-5802, (800) 325-7347</td>
<td>$129.00</td>
<td>Apple II, IIgs, Laser 128</td>
<td>128K</td>
<td>XMODEM, YMODEM, ASCI, Kermit, CompuServe, Transit</td>
<td>VT100, VT52, Televideo, Heath H19, Zenith Z19, ACM-9A, and more</td>
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<td>SIP 1100</td>
<td>IBM PC and compatibles</td>
<td>LCD display, 384 KB memory, 3.5 in. floppy drives</td>
<td>$149.95</td>
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<td>SIP 1120</td>
<td>IBM PC and compatibles</td>
<td>512 KB memory, 5 in. floppy drives</td>
<td>$299.95</td>
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<td>1 MB memory, 10 in. floppy drives</td>
<td>$599.95</td>
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<tr>
<td>SIP 1160</td>
<td>IBM PC and compatibles</td>
<td>2 MB memory, 20 in. floppy drives</td>
<td>$999.95</td>
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*All software packages require a computer-compatible modem and connecting cables.*
Nels Anderson got tired of playing games that didn't take advantage of his PC's EGA graphics, so he decided to write one that did. The result is *Mah Jongg* (Nels Anderson, 92 Bishop Drive, Framingham, Massachusetts 01701; shareware—$10) a game that uses the classic Oriental tile contest to push an EGA system to its max.

The *Mah Jongg* screen consists of 144 beautifully detailed tiles randomly arranged in a classical dragon, or pyramid, formation. To play the game, you simply find matching tiles and remove them from the board. When you've removed all the tiles, you've won the game.

That may sound simple, but winning depends on strategy, and each game has a remarkable number of variations and subvariations.

What makes *Mah Jongg* such a success is Anderson's attention to detail. Not only are the tiles exceptionally well designed, but the game features full mouse support, online help, an undo feature, and a boss key, as well as single-user, multiple-user, and tournament play options. In addition, you can customize the background color, the color of the mouse pointer (actually a tile-sized rectangle), and much more.

If you get stuck and don't know what to do next, *Mah Jongg* offers just as much help as you need. Select Help and you'll find out whether another move exists. If that isn't enough help, the program can show you exactly what your next move should be. If you've chosen one tile and are looking for the other, click on Help, and the program will show you the matching tile if one exists.

*Mah Jongg* keeps track of the number of tiles you have left to play and, on an alternate screen, the tiles you've already played. You can save games in progress and load them later, and, since each game has an identifying number (there are over 65,000 games), you can jot down any game's number and replay it to try to better your score.

If you have an EGA system or equivalent (MCGA or VGA), *Mah Jongg* is a visual feast and a mental workout. If you have a Hercules system, don't feel left out: Anderson has included Hercules support in his newest release of *Mah Jongg*, version 3.0.

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**360K and Counting**

When the PC was released in 1981, its standard disk drive was a single-sided, nine-sectors-per-track device that could store about 160K.

The PC has come a long way since then, but floppy-disk storage capacity has lagged behind other advances. Although you can now buy AT-class machines with 1.2MB 5½-inch and 1.44MB 3½-inch drives, the standard floppy drive is still 360K and has an average access time of about 270 milliseconds (ms).

You may wonder why manufacturers simply can't squeeze more bits onto a disk. This is exactly what's happened with hard drives. Five years ago, 10 megabytes was the standard size; today, 150-megabyte hard disks are becoming common. Things are different with floppy drives, however.

Hard drives usually consist of several disks, called platters, with one head for each platter. The head mechanism can read the information on each cylinder—the tracks that are on the same location on each platter—without having to move. The more platters there are, the more information can be read without moving the heads and the faster the disk can read a file. If you've ever wondered why larger hard disks are almost always faster than small ones, this is why: Larger disks have more platters and a higher cylinder density.

Because hard disks are rigid, they can be precision-coated with superdense media, which means more tracks per inch, yielding a higher track density, and more bits per track, yielding a higher data density.

Floppy disks, however, are limited to one, nonrigid platter. The only way to squeeze more information onto one of these disks is to increase the track density and the data density. Ironically, the smaller the disk is, the more rigid it can be made and the more accurately tracks can be laid out. This is why 3½-inch disks hold more than physically larger 5¼-inch disks—the 3½-inch disks are more rigid.

Several years ago, PCs reached a floppy-disk storage limit of something over a megabyte, and it looked as if capacity was going to be stuck there. But two companies have just announced exciting new super-high-capacity floppy drives that could easily revolutionize the way we use our computers.

Maxell has developed a 3.2MB 5¼-inch disk as well as 4MB and 12.5MB 3½-inch disks. Briar Technology has just announced two drive/disk combinations that hold 21.4MB and a whopping...
Future:

FireZone depicts tactical combat between the European League and the Pacific Combine in 2160 A.D. Also in the futuristic picture are the United African States and Islam, a collection of Arab-based powers. The game comes with nine scenarios. First Blood is an introductory game; Surprise Attack and Final Conflict increase the complexity. The other six advance from there, and once you get through all these, you can design more.

FireZone features seven types of terrain and seven types of combat units. The units include infantry with plasma armor and X-14 nuclear rifles; nova guns; strikers, machines much like the Star Wars walking assault vehicles; grav tanks, a sort of armored hovercraft; heavy tanks, and leviathans, powerful tanks.

Movement is by negotiation, and combat is simple to execute but difficult to survive.

Ancient Future

The map for Annals of Rome represents the ancient world in 28 regions, extending from Aegyptus and Judaea in the southeast to Britannia in the northwest. As the ruling body of the Roman senate in 273 B.C., you establish the Imperial strategy, send leaders into the fight, arrange for new rulers in Rome when they’re needed, and so on.

The game is purely strategic, with a host of conditions to keep you on your toes: inflation, decreased population, and the declining population. Then you have to worry about making sure the right leader is in charge of the right territory. You even have to decide whether you want to start a rebellion. There are foreign wars and civil wars, as well. In other words, it’s just like good old Rome.

Yet Another Jet

From Absolute Entertainment (distributed by MediaGenic, 3885 Bohannon Drive, Menlo Park, California 94025; 415-329-0500) comes F-18 Hornet ($34.95), a one-player flight simulator. Here you take command of a Navy F-18/A jet and execute a series of increasingly complex missions. The introductory mission is tough enough to complete, but by the time you master the tenth mission you can rightly call yourself a Top Gun.

Each time you fly, your score is based on whether or not you’ve completed the mission, the number of targets you’ve destroyed, the condition of your jet, how many difficult maneuvers you’ve flown, and how well you landed on the deck of an aircraft carrier.

As in most flight simulators, you look out from the cockpit. Controlling your jet with the joystick, you learn to taxi, take off, land, and fire missiles. A nice option lets you fly around without worrying about the enemy.

Flying is unusual in that

Power Pak

A PC power system needs three things: a disk cache, a print spooler, and a ramdisk. A disk cache really moves a hard disk into the fast lane. A ramdisk just can’t be beat for lightning-fast file access. And when it comes to freeing your machine while it’s printing, nothing saves you like a print spooler.

These three RAM-based system enhancements have one thing in common: The more RAM they use, the better they work.

But choosing how to allocate scant RAM resources among these software devices is an almost impossible task. Do you simply divide your available RAM evenly among them? That probably won’t give you maximum performance because the disk cache will get the most use, followed by either the ramdisk or the print spooler, depending on your needs. No matter what type of allocation system you come up with, most of the time your print spooler will just be sitting there taking up space and electricity. And, depending on how you use your system, the same probably goes for a big chunk of the memory allocated to your ramdisk.

Multisoft has the answer to the cache/print-spooler/ramdisk dilemma with PC-Kwik Power Pak (Multisoft, 15100 SW Koll Parkway, Suite L, Beaverton, Oregon 97006; 503-644-5644; $129.95), a system enhancement that manages your PC’s memory and dynamically allocates RAM for the print spooler and ramdisk from the cache. When

43.2MB. The access times of the Maxell disks are in the neighborhood of 200 ms, but Bria's 43.2MB model clocks in at 29 ms—an excellent access time for a multiplatform hard disk and an almost unbelievable time for a floppy.

The prices for these high-capacity drives should start at around $1,000, with disk prices ranging from $6 for the 3.2MB Maxell disks to $30 for Bria's 43.2MB media.

COMPUTE!

specific

Two rumors come from the Commodore camp this time around. The first predicts a Commodore 64D, which would be packaged like a 128D. (The 128D’s motherboard, power supply, and 1571 disk drive are built into a separate console; its keyboard and monitor are separate.) The second rumor suggests a full-fledged Commodore 64 emulation for the Amiga. Two Amiga products already exist that emulate the 64, but neither is particularly impressive. This one would be an add-on card for the Amiga 2000 and would include a port for a 1541 drive.

Like other rumors concerning Commodore’s 64, these are probably idle. The 64D idea would be more viable if the Commodore 64 were still used extensively for home or small-business productivity. The 64 emulator for the Amiga would be useful only if Amiga software were still scarce.

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Flying is unusual in that
you can't turn around until you reach your destination. It can be an island, a carrier, or an airstrip.

Certainly not an easy game to master, F-18 Hornet offers something different in the line of flight simulators for the 64/128.

Adventures to the 64/128. Faery Tale ($49.95) offers a graphically stunning overhead view of a large, rich fantasy world in which you direct three brothers through their individual quests. The game works with either keyboard or mouse; the mouse is better. "Faery Tale is a very fine game with a very big problem. Even on the Amiga version, disk access is frequent and annoying; on the 64/128, it's more frequent and far, far slower. Speed-up cartridges don't seem to help. I tried Warp Speed and Fast Load, and the game, unfortunately, does not use the 1571's burst mode. The game is still enjoyable, but playing it requires even more dedication than is usual for a role-playing game. Deathlord ($29.95) from Electronic Arts (1820 Gateway Drive, San Mateo, California 94404; 415-571-7717), is particularly welcome because it deals with Japanese, rather than European, mythology. Races include Human, Toshi (good magic users), Kobito (a dwarflike race), Gnome, Obake (a hobbitlike race), Troll, and Ogre. The rich assortment of character classes is comprised of Senshi (mercenaries), Ansatsuisha (assassins), Genkai (illusionists), Kishi (good guys), Mahoutsukai (spell casters), Ronin (head bashers), Yabanjin (primitives), and, of course, Samurai.

In Deathlord, you and your party must defeat the evil power loose in the world of Lorn. Six adventurers can join the party, but each character needs money for goods and equipment. There are objects to be found, dungeons to be explored, magic spells to be learned—the whole bit. This is a strong game, with its Japanese emphasis especially appreciated. Mars Saga ($34.95), also from Electronic Arts, is a science-fiction role-playing game that takes place on Mars in the not-too-distant future. Like Deathlord, Mars Saga is party-oriented. It also features a good tactical battle system. Your goal is to find out what happened to Proscenium, the mining outpost destined to be Mars largest city. Contact with the outpost has been lost, and you must brave the Martian environment in an attempt to find out why. Another rich and lengthy game, Mars Saga makes good use of the 64's graphics without accessing the 1541 drive too often. —Neil Randall

Q-Link Games Grow

Q-Link, the 64/128-specific telecommunications service, has added two new games to its repertoire: Boxes, which was previewed November 1988, should be running full-time by now. Quad 64 made its debut in January.

Boxes is the old dots game. Most of us played the game as kids, trying to join the dots and eventually close the boxes. Win boxes by closing them, and win the game by closing the most boxes. In the Q-Link version, two players compete in realtime by modem.

Quad 64 is three-dimensional tic-tac-toe. Each of the four boards is a 4 x 4 grid. The object is to fill in four consecutive squares—vertically, horizontally, diagonally, or across the four boards. Try it once and find out how tied to two-dimensional gaming you are.

Both games must be downloaded to your Q-Link games disk before you can play them. For information, contact Quantum Link, 8620 Westwood Center Drive, Vienna, Virginia 22180; (800) 392-8200, or (703) 883-0788 in Canada.

Long-Playing Roles

Three notable role-playing products have found their way to the shelves. If you like computer role-playing games, you'll like all of these.

After what seems an eternity since its release of the program for the Amiga, Micro-Illusions (17408 Chatsworth Street, Granada Hills, California 91344; 800-522-2041) has finally ported The Faery Tale

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Now may be the time to get the family another Apple II computer. A second Apple in the house could solve a lot of problems—maybe keep the kids' sticky fingers off your computer. A second Apple in the house could solve a lot of problems—maybe keep the kids' sticky fingers off your computer. AppleWorks GS is a window on the future of Apple II software. It may be a cracked window, what with its frequent system crashes and its multiplicity of quirks. But users are only now discovering, but it's still a clear enough window to see that true 16-bit software for the IICs is here to stay.

Many of the early users of AppleWorks GS were AppleWorks Classic pros, people who had spent years with AppleWorks and wanted something more than just a fast version of a four-year-old program. (In fact, these were the people who made early AppleWorks GS's sales so good—35,000 during the first three weeks, the grapevine said.)

AppleWorks GS is particularly rough on traditional AppleWorks users, who must forget virtually everything they've learned. A prime example is in the AppleWorks GS database module.

The database is extremely flexible and, in its Form view, lets you customize how each record shows on the screen.
There's also a List view, which puts the database information in a spreadsheet-like format, each record on a line, each field in a cell. So far, this should sound familiar to AppleWorks Classic users.

But while you can switch from Form view to List view in AppleWorks (using the Open Apple-Z combination) and see the record in the Form view that you selected in the List view, that's impossible in AppleWorks OS. Select a record while in List view, switch to the Form view, and you'll see an entirely different record. It's not a randomly selected record, but the last one displayed in that format. More than likely, it's the first record in the file.

There is no work-around. The only way to keep both the Form and List view synchronized is by manually moving the scroll thumb until the appropriate record is on the screen in both views. Alternately, and easiest even though it's time-consuming, you can use the Find command on the Organize menu to shift to the correct record.

What a pain.

**Talk It Up**

When the Apple IIgs debuted over two years ago, some of its most enthusiastic fans were educators. Teachers nearly drooled over the IIgs's 15-voice sound chip, seeing (or hearing) in that chip a potentially powerful teaching tool. Digitized and synthesized speech were the promises that teachers took to heart.

It's only been recently, however, that the major educational software publishers have come through with their end of the bargain—talking Ilos software.

Three packages in particular are worth noting. Two of them, Talking Math and Me and Talking Reading and Me, come from Davidson (3135 Kashiwa Street, Torrance, California 90505; 213-534-4070; $39.95 each). Although they play the same way their non-talking ancestors do, these Ilos-specific programs use higher-quality graphics and speech that has to be heard to be believed. Children get to choose between two voices—an adult's and a child's. Both voices are female—in fact, the adult voice is the digitized voice of a Davidson employee.

The third package is The New Talking Stickybear Alphabet, from the Weekly Reader Software series (Optimum Resources, 10 Station Place, Norwich, Connecticut 06058; 203-542-5553; $49.95). As with the Davidson programs, Talking Stickybear Alphabet is a remake of an earlier success, but adds sound and speech. The quality of both is just as good, if not better than, that found in the Davidson programs.

Neither Davidson nor Optimum took many chances with these releases; they were proven sellers without speech and are guaranteed to do well with it. Apple IIgs owners, whether schools or parents, want more than just a crisper picture on the monitor for the money they've spent. It looks as if they're finally getting the same extra in their software that they've paid for in their hardware.

**Full of GS**

Almost all of the hot Apple II software action is in IIgs-specific packages. Although there's an occasional great piece of software that runs on all Apple II's (an example is The Learning Company's Children's Writing & Publishing Center), the really good stuff is only released for the IIgs.

Zany Golf, an offbeat ver-

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It doesn’t matter what kind of computer you have, there’s bound to come a time when you could use a little help. Well, you can get it on CompuServe, any time, day or night. Once online, you’ll find industry experts, technical reps, and thousands of other users just like you, all swapping helpful tips and information in one of CompuServe's Forums.

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sion of miniature golf, is a good case in point. The IIGs game from Electronic Arts (1820 Gateway Drive, San Mateo, California 94404; 415-571-7171; $39.95) puts 18 eclectic holes in front of your putter. There's windmill, of course, but it's on the first hole, leaving the real fun for the next 17. A bouncing hamburger, rising walls, high-speed fans, a moving hole, and even lasers come into play before the game's over. Next year, Apple will make use of the IIGs's great graphics-and-sound capabilities, and you use the mouse to aim and hit the ball. The game plays quickly and, until you reach the 18th hole, addictive-ly, as you keep going just to see the next crazy, Rube Goldberg-like setup. The 18th hole is a miniature-golfer's nightmare, for its two levels are studded with pitfalls and barriers that misdirect and vaporize your ball. The only thing going for you is that you can stock pile balls during your run for the last hole. Just hope you have at least a dozen ready when you watzz up to the last tee.

Another example of innovative IIGs software that will never make it to the Ile, Ile, and IIC plus computers is Cartooners, also from Electronic Arts ($99.95). This animated movie maker is a fun toy and tool for children of all ages, though the package says to keep it in the hands of kids 6-12. Ten background scenes are included, as are more than 40 characters that you can place, turn, walk, and spin across the stage. Although the characters are generic cartoon figures, some, like the big, bad wolf and the little, pink pig, are sure to find favor with the kids. You can easily add text in speech balloons that move with the actors, and you can insert sound effects (the barking effect, for instance, sounds like something from a Wile E. Coyote cartoon) anywhere in the animation. Within a few moments of popping in the disk (more like a few minutes, because Cartooners is one of the slowest-loading IIGs programs around), you'll know how to change one of the animated shorts included with Cartooners or how to build your own version of Steamboat Willie.

Don't expect either Zany Golf or Cartooners to migrate down to the 8-bit Apple II computers. Their graphics, sound, memory requirements, and interface are strictly IIGs fodder. The trend is already clear—if you want to stay at the cutting edge of Apple II software, you need hardware to match.

— Gregg Keizer

Commodore recently published a new technology report, hinting at the direction the company intends to take with the Amiga. The report described in detail such mouthwatering hardware as the Professional Video Adapter. Commodore's broadcast-quality plug-in board means to give the Amiga built-in Targa-like capabilities. The PVA, which is planned only for the A2000, will occupy the video slot and a Zorro slot and will include a genlock/keydown, a realtime frame grabber and digitizer, broadcast composite output, and video-paintbox/special-effects software. Given NewTek's problems with bringing out the Video Toaster, Commodore may be able to grab the professional video market for itself.

Another device discussed in the report is a combination hard disk and RAM expansion for the A500. The auto-booting 20-megabyte hard disk plugs into the expansion port and contains a controller and chip slots for up to 2 megabytes of RAM, making the A500 a formidable home machine. The rumor is that the hard disk/ RAM combo will be unbeatably priced, but the disk is very slow—about 85 ms access time. That's still faster than floppy, though.

The A2500UX, the UNIX Amiga mentioned in an earlier column, may appear in the second quarter of this year. AMIX, the Amiga version of UNIX, will run concurrently with AmigaDOS, so you'll still be able to play Arkanoids while running those atmospherically turbulence simulations. Watch also for official announcements of such advanced hardware as Commodore's Transputer boards for parallel processing at the speed of a mainframe, and a graphics card for realtime 3-D animation at a resolution as high as 1024 × 1024 pixels.

As is customary with Commodore, the new technology report didn't include price information or ship dates. You can always try to pry the information out of the company by contacting Commodore Business Machines, 1200 Wilson Drive, West Chester, Pennsylvania 19380; (215) 431-9100.

Apple Sauce

Many industry insiders acknowledge that the Amiga 500 hurts Apple IIGs home market sales. Compared to a $2,000, similarly equipped Apple IIGs, the A500 is a real bargain. Amiga developers should take note and start working on better educational software.

Now, if only Commodore could hone the Amiga operating system to match its superior hardware, Apple would really have something to worry about—the recent price hikes on Macintoshes have also left Apple vulnerable to less expensive competitors. Workbench 1.4 holds some real promise in that regard, but more about that in a future column.
with the A2620, Commodore's 68020 accelerator board, and two megabytes of 32-bit RAM.Both machines are hardware- and software-compatible with earlier Amigas.

You won't need to buy a whole new Amiga to get the new boards; Commodore is selling the hard disk, the 2090A controller, and the A2620 accelerator board separately. The A2286, AT-compatible Bridgeboard should also be available by now. List price for the 2090A is $399; the A2500 runs $4,695—not bad for a machine with better performance than a $9,000 Mac II's.

**Amiga Antics**

The near demise of the Atari ST in the United States has left the home computer field with three major players: Commodore, Apple, and Tandy. Former Atari boosters are moving over to Amiga with some interesting new products.

One of the best-known ST developers is Antic Software (544 Second Street, San Francisco, California 94107; 415-957-0886), which publishes the Cyber series of CAD, 3-D, and animation software for the ST, as well as the magazines dedicated to Atari computers. Sources at Antic tell me they are planning an Amiga magazine as well. A good measure of the growing popularity of the Amiga is how many new Amiga publications are coming out. [In fact, COMPUTE! Publications recently introduced a new Amiga magazine of its own, COMPUTE! Amiga Resource. Look for it on your local newsstand—Ed.]

Antic's Amiga offerings include Zoetrope, an animation program written by Jim Kent, creator of Aegis Animator, and a series of 3-D object clip-art disks that work with Sculpt 3-D and VideoScape 3-D.

**Plague Ship**

Antic also offers the Amiga Pioneer Plague, an arcade shoot-'em-up with a twist—Antic claims it's the first Amiga game with all HAM graphics. The premise is that Earth has sent out the self-replicating space probe Pioneer Probe Mark IV to terraform all the planets in the galaxy so that they will be habitable for Earthlings. The Pioneer Probes have mutated, though, so they use planet inhabitants as raw material for constructing planetwide megalopolises.

You must stop the spread of the Pioneer plague by shooting down as many Probes as you can find. You have an airship with photon missiles and several drone protectors. The Probe has Shark Fighters, Homers, Air Mines, and Boxers. Once you've obliterated the menace on one planet, you must warp to the next infected planet, with battles en route. Some strategy is involved: You can program your drones to execute various attack and defense maneuvers, and you can, if necessary, take shortcuts from one planet to the next using map overlays provided with the game.

The 4096-color graphics in Pioneer Plague are indeed impressive, especially the planet views (although the HAM files are so big that only a few planet views fit on one disk). The realism extends to the smoothly scrolling, very detailed cityscapes, where most of the gameplay takes place. The driving score creates tension before each big battle. It will be hard to port this game to another system and retain the same interest level.

I have only a few complaints: All the colors on the control panel make it hard to read; and the cityscapes and attackers are not well differentiated from planet to planet, even though the planet types ever change.

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"The idea of playing a space war game against real people immediately appealed to my competitive instincts. In MegaWars, when you go one-on-one combat with a player...there is only one ship left when the dust settles."

—Douglas Banker, Rock and Roll Business Manager
are different. I also found the arcade action a mite too fast—but maybe I'm just getting too old to monitor the tactical displays while shooting at attackers, deploying drones, avoiding the control towers, stealing fuel from depots, and choosing the next planet.

Now let's see a HAM game with excellent gameplay, 3-D ray-traced overscan animated graphics, speech synthesis, engaging characters, minds of their own, a real narrative, and an UNDO function. Anyone ready for the first ten-floppy game?

— Steven Anzovin

notes on your computer—often a preferable method.

But QuickLetter isn't just another word processor--curn-desk accessory. You can get a public domain package if that's all you want. QuickLetter stores letterhead stationery images, keeps track of addresses, and creates envelopes easily. Right now, the package comes with SpellsWell, so you even have a spelling checker.

Breaking and Entering

Before complicated networks and E-mail and special-interest bulletin boards, there was Sneakernet. Sneakernet required no special protocol, no special cables and terminal software. To communicate on Sneakernet, all you needed to do was take a disk from your computer and give someone else's, stick the disk in that remote drive, and copy some files—instant data transfer. Well, almost instant.

For many of us, Sneaker-net is still the way to go. We exchange public domain games with friends at work, we take our word processing files to laser printing services, we share particularly useful budget templates with business colleagues. But what happens if I send you a picture for one of your word processing files and you don't have a graphics program? What happens if you send me a MacWrite file when all I have is WriteNow; and you forgot to save it in ASCII format? How do we share incompatible files?

Mediagenic's TENPointO division has just released a package that could help those of us using Sneakernet. OpenIt! prints files to disk so that you can manipulate them even if you don't own the program used to create them. You can use OpenIt! on an electronic network, too—if you must.

Printing to disk works just like printing to a preview screen. You see the document as it will look on paper. You can even do a little touch-up on the file: You can change fonts and scale the image. Then either convert the file to importable text or copy the image to the clipboard and you're ready to paste it into your word processing or graphics file. OpenIt! lets database and spreadsheet users separate items with commas, tabs, or returns, so some of the data can be preserved as it moves from its original incarnation to OpenIt! to its final destination.

Last but not least, OpenIt! includes a public domain version that you can send with any OpenIt! file. I don't need to own OpenIt! to be able to use your files. I can't do as much fiddling around with the program as you can, but at least I can get your files into my computer so that I can work from there.

It's important to understand that you can only open files that can be printed. I wanted a peek at a file I couldn't identify, but it wasn't a printable document.

My only gripe with the program is that you have to go through the printing procedure before you can see the file. Printing to disk should be implied by opening a file in OpenIt!. Outside of that glitch, the program is easy to use and can be very helpful.

OpenIt! costs $89.95. You can get more information from the TENPointO division of Mediagenic, 3883 Bohannon Drive, Menlo Park, California 94025; (415) 329-0500.

Business Focus

Also from TENPointO: FocusPoint has been revamped and renamed as FocusPoint II ($199.95; $89.95 for an upgrade). It's a powerful organizer for business people who wish to use HyperCard to its fullest potential.

The application is a collection of interrelated cards: An appointment book stores daily engagements; a to-do list helps prioritize and track each day's tasks, a monthly calendar easily stores regular appointments and special occasions; and a phone directory and dialer tracks outgoing and incoming calls. Then there are cards for keeping track of records: client records, vendor records, and financial records. There's a project-management module and a task-assignment module. You can even set up an electronic mail system.

It's overkill for the home, but not for the home business. If you have enough RAM to run your Macintosh applications from HyperCard, you can benefit from FocusPoint II. But you should compare it with similar packages like QuickDex or SideKick.

If you've been reading COMPUTE! for a while, you already know our general opinion of Pirates!: We love it. (We gave it our 1989 COMPUTE! Choice Award in the Historical Game category, for instance.) Until now, though, Macintosh users have been left high and dry. Finally, we can sail the seven seas of the rest of the micro--sea dogs.

Maybe the game suffers a little on the Macintosh's black-and-white monitor, maybe the mouse isn't the ideal input device for fencing and sea battles, maybe the hornpipe music doesn't go on long enough, but Pirates! is as entertaining as any game I've played.

In this simulation, you play the role of a seaman. You pick what kind of sailor you're going to be. Did you know there was a dangerous between a pirate and a buccaneer? Can you attack the French if you've made friends with the English? You'll learn about all of these subtleties in the game. As an apprentice, you get a lot of help from outsiders. The game really makes it easy for beginners to become addicted.

I'm not crazy about simulations, but this one is absorbing. The skills are easy to learn, but hard to master. You get a feel for sailing, for using a sextant, and for firing cannons on other ships—first you must turn to a vulnerable broadside position and then you fire.

MicroProse has put together a good manual, with rules, tips, and historical information. Pirates! starts at $95.95. For more information, contact MicroProse, 180 Lakefront Drive, Hunt Valley, Maryland 21030; (301) 771-1151.

—Heidi E. H. Aycock
Macro Mouse ($29.95), a macro recorder from Antic Software (544 Second Street, San Francisco, California 94107; 415-957-0886), holds as many as four macros in memory. These macros can record all keystrokes and mouse movements, so you can automate almost any task.

Macro Mouse is a desk accessory which can be activated by either selecting it from the Desk menu or pressing a hot key. A small menu pops up when Macro Mouse has been activated, at which point you can record, play, load, or save macros. Macros can insert specified text on the screen, loop through a specified section of the macro for a selected number of times, loop until a special code word is input, and chain to another macro (allowing for macros of virtually unlimited length). Macro Mouse can be configured by a separate program to set buffer sizes and also to autoload as many as four macro files when it's first activated. It can even be set to autorun one of the loaded macros, very neatly circumventing the ST's inability to autorun a GEM-based program.

Macro Mouse also comes with a utilities program that duplicates many of the control-panel functions and adds several utilities such as a calculator, a free RAM indicator, a disk-write verify switch, a screen-to-print echo, a screen snapshot (DEGAS format) utility, and a hot key to enable a warm or cold reboot. Best of all, this utility doesn't take up a desk accessory slot but simply adds commands to the Macro Mouse menu.

Package Deal

Michtron (576 South Telegraph Road, Pontiac, Michigan 48053; 313-334-5700) has released a collection of the company's powerful utilities called Utilities Plus ($59.95). DOSShell is the command line interface which uses MS-DOS-like commands and runs batch files. Superdirectory categorizes files and records file-content comments (as many as 25 characters); it also finds, sorts, edits, and prints directories. M-Disk sets up a ramdisk and print spooler. And Stuff features 21 useful utilities for such tasks as reordering the execution of AUTO folder programs, comparing binary files, autobooting a selected GEM program, encrypting files, selectively enabling AUTO folder programs and desk accessories, searching for text strings in files, and displaying program files in binary and hex. This package bundles programs which were originally sold separately for more than $200. It belongs in the software library of any serious ST user.

Less Basic BASIC

GFA BASIC has become the language of choice among ST users, and version 3.0 ($79.95) is the newest incarnation of the runaway best seller. The package, formerly marketed by Michtron, is now part of the Antic Software line (Antic Everyday People on CompuServe

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Software, 544 Second Street, San Francisco, California 94107; 415-957-0886). The new editor is similar to the one in version 2. A menu bar holds commands for loading, saving, and editing programs. You can select the commands by using a function key or by clicking on the menu selection with the mouse. Enhancements to the editor include access to desk accessories and customization options for printing program listings.

There are over 400 commands available, including advanced loop commands (DO, WHILE, LOOP, and UNTIL), decision commands (IF, ELSE, ELSEIF, and CASE), and structured commands (PROCEDURE and two kinds of FUNCTIONS). With the PROCEDURE and FUNCTION commands, you can build GFA BASIC programs in segments, to which variables are passed and from which values are returned. A full complement of commands for file operations, sound generation, reading joystick and mouse input, and advanced arithmetic calculations are included.

A wide range of error handling and debugging commands are also available, such as a command to run procedures after each command is executed, providing a way to check on a program in progress. Also included are interrupt programming (EVERY and AFTER), graphics commands, and even turtle graphics commands. GEM support extends to alert and dialog boxes, menu setup and processing commands, event messaging, and GEMDOS, XBIOS, BIOS, VDI, and AES calls by name. Even the GEM arrays (INTIN, ADRIN, and so on) can be accessed directly—no need to PEEK or POKE. Support for windows isn't appreciably better than it was in version 2—coming multiple, overlapping windows, for instance, still requires too much work.

Antic is rewriting the program manual to fix some serious problems. People who buy Antic's GFA BASIC 3.0 will get the current manual plus a card which can be returned to Antic for a free copy of the revised manual. People who purchased version 3.0 from Mictron may buy the upgrade manual for a nominal fee from Antic. Antic also plans to make GFA Artist and GFA Draft available.

All upgrades of Antic's GFA products will be available through Antic regardless of where the original program was purchased.

Mictron published many books to support GFA BASIC, and Antic plans to make available as many as possible. Mictron retained the rights to GFA Reboot Camp ($12.95), a beginner's book about GFA BASIC. While it isn't as detailed as other books and doesn't touch on the more complex commands, it's an excellent text for getting started.

Mictron also kept the rights to GFA BASIC Programmer's Reference Guide ($19.95), a much more advanced book. The first section largely duplicates the information in the manual, but in a friendlier way and with more complete examples. Sample programs abound. Advanced subjects such as sound, animation, input/output, and VDI/AES are covered.

Check with Antic for Programming with GFA BASIC 3.0 ($12.95), which covers dialog boxes, menus, the resource construction set, sorting, structured programming, Line-A calls, debugging, GDOS applications, and new variable and pointer types. There's also a section on how to handle windows. Many sample programs are included, and the explanations are clear and well illustrated. Utility programs include a resource analyzer, a 3-D function plotter, and an icon creator.

—David Plotkin
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Each month, "Fast Looks" offers up snapshots of some of the most interesting, unusual, or important software and hardware for the Amiga, Apple II, Atari ST, Commodore 64/128, IBM PC, and Macintosh lines of personal computers. Get the last word on what's new—here, fast, first.

Battery Watch

Ping! That flicker you just saw on your laptop's screen was your computer's last spark of power. Your built-in battery is dead and there's no outlet on United Airlines at 30,000 feet. Unless you have ESP, you never know exactly when a laptop's battery might fade. That's why Battery Watch, a TSR program from Traveling Software, is such a great utility. You set it once by telling it how much juice is left in the battery (the best time is right after a full recharging), and from then on it tracks your computer's power consumption and keeps a relatively accurate estimate of how much longer you can run the machine. You can call up a bar indicator at any time by pressing a hot-key combination.

Battery Watch also solves another major laptop problem, a phenomenon that eventually reduces your laptop's ni-cad battery life to nearly 0. When you recharge a battery that's only partially discharged, you're actually "training" it to provide power for a shorter period of time. Battery Watch offers a deep-discharge option which returns it to its maximum charge life.

Battery Watch is an elegant solution to problems nearly all laptop owners encounter. If you live on the road, your only companion your trusty computer, pick up this utility.

— GK

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Neuromancer

You wake up in a bar in Chiba City, a sleazy section of Tokyo. A hot cyber-space cowboy—a sort of superhacker able to penetrate corporate databases—you're down on your luck. Your computer deck is in hock. But you've got a few credits, a few contacts. With the right hardware, software, and skills, you could be back in cyberspace.

William Gibson's speculative novel Neuromancer comes to life in this excellent adaptation. Through conversations with other characters—both in person and via communications networks—you're able to build a picture of a dark, futuristic world where money and information are all that matters.

Despite a regrettable tendency to mute the grittiness of its fantastic world with adolescent jokes, Interplay has accomplished quite a bit in Neuromancer. Its setting and plot are well realized and commendably rich. Using an efficient point-and-click interface, you can maneuver your character through both real and electronic worlds that are convincing and self-consistent.

Good graphics, an excellent soundtrack by DEVO, and an easily mastered interface help make this a convincing and entertaining software novel.

—KF

Apple II—$44.95
Commodore 64/128—$39.95
IBM PC and compatible versions tentatively scheduled for April release—$44.95
Interplay
Distributed by Mediagenic
3885 Bohannon Dr.
Menlo Park, CA 94025
(415) 329-0800

Contributing to "Fast Looks" this month were Keith Ferrell and Gregg Keizer.
Battlehawks 1942

Climb into the cockpit of a carrier-based fighter or bomber and get ready for a seat-of-the-pants, sophisticated, World War II naval air-combat simulation. Depending on the mission you select and the country you fly for, Battlehawks 1942 lets you pilot a Japanese Zero fighter, Val dive bomber, or Kate torpedo bomber, or an American Wildcat fighter, Dauntless dive bomber, or Avenger torpedo bomber.

Fly and fight in four famous naval air battles—Coral Sea, Midway, Eastern Solomons, and Santa Cruz—each offering four specific missions for Japanese and American pilots. As a U.S. pilot in the Coral Sea scenario, for example, you pilot a Dauntless in a dive-bombing attack on the damaged Japanese carrier Shoho, or you fly a Wildcat to escort other U.S. bombers and defend the Lexington against attack from Kate torpedo bombers, or you defend the Yorktown from a dive-bombing attack by Vals. Assume the role of a Japanese pilot in the same battle and you fly a Zero protecting the Shoho or Shokaku carriers, pilot a Kate on a torpedo-bombing attack of the Lexington, or bomb the Yorktown with your Val.

Four training missions let you perfect your fighter intercept, fighter escort, and dive- and torpedo-bombing skills. During these training missions, you'll face only limited opposition from the enemy. In addition, you can modify any of the regular active-duty missions. For instance, you can fly the mission in newer or older models of the same plane, take along unlimited fuel or ammunition, make your plane invincible, put yourself a few thousand feet above the enemy at the outset of the mission, or select the skill level of the enemy pilots you'll face. When you customize a mission, however, the results won't be recorded onto your permanent service record.

Battlehawks 1942 isn't a completely realistic simulation. There aren't any takeoff or landing sequences to master: You begin and end airborne. Also, while a steep climb will invariably stall your aircraft, the program is very forgiving and, unless you stall at a low altitude, it's easy to recover.

What is amazingly realistic about Battlehawks is its detailed, animated graphics. Everything you see, from the water and ships below to the enemy fighters darting evasively across your gunsight, appears solid, 3-D, and true-to-life. Though few of us have actually flown a combat mission in a World War II-era fighter or bomber, anyone who's ever watched filmed footage of naval air combat will agree that this game replicates the action as well as, if not better than, any other aerial-combat simulation for the PC.

With many air-combat games, you battle wave after wave of robotic enemy fighters that come directly at your plane and fire a few machine-gun blasts before peeling off in a steep bank to the right or left. Battlehawks, on the other hand, challenges your dogfighting skills with enemy pilots who aren't locked into specific attack patterns. Just when you think you've seen the enemy from every possible angle, a Zero will swoop by frighteningly close to your windscreen.

In fact, the onscreen action of Battlehawks 1942 is so detailed and realistic that it's almost impossible to fully appreciate the view while piloting your aircraft. Fortunately, if you remember to toggle on your onboard camera just before the action gets heavy, you'll be able to watch an instant replay of your dogfight or bombing run.

You can watch the replay from almost any vantage point. While in Replay mode, you can increase or decrease the altitude of the camera, reposition the camera to directly behind your own plane, or move the viewing angle around by using either a joystick or a mouse. All these possibilities let you not only relive the glory of a triumphant dogfight or successful bombing run, but also analyze your mistakes.

Battlehawks 1942 comes with an exceptional 128-page manual. It covers everything you need to know to take to the skies and also provides a historical overview of the four battles and reference information concerning flight fundamentals, aerial tactics, and Japanese and American aircraft and warships.

With its detailed animation, worthy adversaries, and photo replay, Battlehawks 1942 promises aerial thrills and combat chills for even the most jaded personal computer fighter pilot.

—Bob Guerra

Battlehawks 1942

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Joystick or mouse recommended; 3½- and 5¼-inch disks included.

Wealth Insurance

Economist Paul Erdman predicts the U.S. economy is headed for a major recession/depression in the 1990s. But never fear—he has a game that can help you survive this impending financial catastrophe.

Wealth Insurance simulates a depression's impact on your net worth within five different scenarios, including the Great Depression, the 1961 Recession, and the Reagan Boom. Two other scenarios—a 1990s recession and a 1990s depression—are based on historical trends of various economic indicators. Each scenario is modeled after actual stock prices, interest rates, real estate prices, and income tax rates of the period. You are randomly assigned a starting financial position: poor, middle class, or rich. As in real life, you win when you increase your net worth by making astute investment decisions.

Well-designed screens assist you through each three-month turn. A screen shows the current Dow Jones Industrial Average and your net worth, monthly income, and cash position. As the game progresses, screens display news bulletins and investment advisor reports.

You can call up summary screens to examine your stock or real estate holdings and transactions. These screens display information like recent price action and costs (for stocks) and sale price, fees, loans, payment, and more (for real estate). You can print the screens if you want a paper record.

The game year starts with Wealth Insurance computing your federal tax status. To make things interesting, you may get a 10-percent salary cut or even
Shrewd investing will make you a winner in Wealth Insurance.

Every three-month snapshot includes the effects of mortgage, taxes, and insurance for your real estate holdings. The computer advisor recommends actions generally accepted by financial consultants of your scenario's time period. For instance, if you have negative income and little cash, your advisor will suggest selling assets to avoid bankruptcy. Oddly, the recommendations didn't always match my financial situation. Fortunately, you can either take this advice or make your own decisions.

Depending on the scenario, a game spans six or eight years. Just as there are loopholes in life, there are ways to boost your game rating by manipulating your net worth—but you'll have to discover them on your own.

Investment choices are severely limited; simplifications in securities choices, tax rates, and real estate investments restrict the game's realism. You have, for instance, only 11 choices in the stock market: seven blue chip stocks, Treasury bills, corporate bonds, gold, and silver. For real estate investments, you are limited to one house and one duplex in California, Illinois, New York, or Texas, and one piece of land in each of three states—California, New York, and Texas.

In the futuristic scenarios, state taxes are always 5 percent of wages even though Texas and Florida have no income tax. There are no deductions for taxes paid on rental real estate, and your own home is always in California. For purchases, you have a choice of five fixed- and six adjustable-rate mortgages.

The first half of the 40-page manual, written by Erdman, explains the business cycle and its effects on wealth building. There's sound investment advice here for playing the game's future scenarios and for managing your finances during the upcoming decade.

The last half of the manual contains some errors. It says the game requires a color monitor, but monochrome is one of the installation options. Also, instructions to insert the program disk into drive A (if you're installing on a hard disk) are missing. And the manual's half-inch illustrations are too small to convey much information.

An explanation of the assumptions used in the game would have been better than the glossary provided. For example, you can sell short, but only for one three-month turn and only if your assets are sufficient. The manual doesn't define what sufficient is. You just have to experiment, changing the size of your short sale until the program accepts it. That's the kind of figuring a computer game should do for you.

Wealth Insurance gives novice investors a historical portal to the financial world and offers a "flight simulator" opportunity to explore the heady atmosphere of finance without risking a real crash. Its limitations make it a simple game instead of an in-depth simulation that can accurately score your financial survival.

—Glenda McClure

**Wealth Insurance**

For... IBM PC and compatibles with 512K—$39.95
From... Britannica Software 345 Fourth St. San Francisco, CA 94107 (415) 548-1866

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**FormSet**

Any business, large or small, has to keep a lid on expenses. Business supplies, especially printed forms, can fill a balance sheet with red ink if they're not controlled. SoftView, with its Business Forms Edition of FormSet, can help you maintain the health of your bottom line.

FormSet's discrete stock of 65 predesigned business forms comes with client and vendor addresses configured for standard left-window envelopes. The program allows easy, automatic insertion of information at appropriate places within individual and linked forms. The program's appeal obviously depends upon the degree to which you're locked into your existing business forms. If your business is young enough, or flexible enough, to adapt to the program's forms, then all the better.

On the IBM PC, FormSet uses a runtime version of Microsoft Windows as its interface and allows input from a mouse or the keyboard. I prefer the mouse; without it you'll have to execute double keystrokes (F5 and the Alt key twice) because of a Windows anomaly. SoftView promises to fix this in a future release, but, for the time being, it's annoying.

You can use FormSet to produce master documents for photostats. But if you want to fill out the forms and keep running records of outstanding receivables, payables, or inventories, go right ahead. Fill out the forms directly from the computer screen; where applicable, FormSet lets you itemize.

Forms are divided among five menus: general, accounting, payables, personnel, and sales. Individual forms cover everything from inventory summaries to vendor addresses and accounts receivable. SoftView promises to add a "flight simulator" opportunity to explore the heady atmosphere of finance without risking a real crash. Its limitations make it a simple game instead of an in-depth simulation that can accurately score your financial survival.

—Glenda McClure

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SoftView has built some effective protecive features into this program. If you incompletely fill out a purchase order, for example, and then try to print it, FormSet will warn you that the order is missing data. By hitting the F3 key, you can go right to the lines on the form where you failed to insert data.

The program will let you mark fields as missing or put in estimated amounts for projections. Form menus visually flag form status: An incomplete form is identified with a question mark; a complete form, with an asterisk.

FormSet isn't designed to be a full-blown accounting package, but it can take care of simple invoicing and in-
ventory needs. With linked forms, the pertinent entries you make in one form are automatically selected for inclusion on related forms. This feature precludes operator error and ensures consistent data entry. When you save a data file, all the data entered into all forms is assembled into a single file. When you recall the saved data, all needed forms are automatically opened.

**Rocket Ranger**

Before the days of television (and long before home computers), kids all over the country looked forward to Saturday-morning serials at the local theater. Munching candy and popcorn, they watched spellbound as Flash Gordon, Buck Rogers, and other fantastic heroes performed hair-raising feats using rocket ships and ray guns. Long lost, but never forgotten, the matinee serial returns to the screen in the form of an interactive computer game from Cinemaware called Rocket Ranger.

As the hero, Rocket Ranger, your job is really cut out for you. The game begins with an urgent message from twenty-first-century scientists: The Nazis won World War II! By sending you a jet-propelled rocket suit, ray gun, and secret decoder wheel from the future, the scientists hope that you can alter history and save humankind—a rather difficult assignment for even the most intrepid adventurer.

Playing the part of Rocket Ranger was difficult at first. The game’s instructions are a bit complex; it took a while to figure out what I was supposed to be doing. Once I got the hang of it, though, I realized that Rocket Ranger works on several levels, with plots and subplots that all tie together. Winning requires a knack for arcade action, strategic thinking, timing, and, most of all, patience.

Your ultimate goal is to stop the Nazis from spreading their reign of terror over the entire planet. To do this you must find their five secret rocket labs, obtain the components to build yourself a rocket ship, and then capture enough Lunarium fuel to fly to the source of the Nazi’s power, the moon. Along the way, you must also rescue a kidnapped American scientist and his beautiful daughter. (After all, it wouldn’t be a matinee serial without a young damsel in distress, would it?) While this is a fairly straightforward plot, there are many subtle steps involved. The first few times I played, I had a hard time just getting off the ground, let alone trying to save Professor Barnstorff’s beautiful daughter.

The game opens at Fort Dix, New Jersey, which is your base of operations in your secret war against the Nazis. The dazzling graphics include the Ft. Dix Menu, which gives you choices of either going to the War Room, Fuel Depot, or Rocket Lab, or taking off (Take-off) with your rocket pack.

You play much of the game from the War Room, where you send orders and receive reports from your five secret agents, who help you locate and infiltrate targets. A detailed world map shows your location as well as that of agents, zeppelin fleets, bases, factories, and targets.

Secure the Earth from Nazi terror by attacking the secret moon base in Rocket Ranger.

In enemy territory, you’ll find yourself involved in arcade action against squadrons of ME-109 airplanes, antiaircraft guns, zeppelins firing aerial torpedoes, ack-ack batteries, and firefighting guards. The arcade sequences are extremely detailed on the PC in CGA mode and are even better in EGA or Tandy 16-color mode. I found that the animated sequences worked well in CGA mode on an 8-MHz machine, but for 16-color mode I would highly recommend a PC of at least 12 MHz. I would also advise that you use a joystick for maximum effectiveness during the arcade sequences.

Even after you’ve battled the Nazis on Earth, the game is far from over. You must fly to the moon for the final assault, where you must eliminate a squad of Nazi Zombie Women before the air, heavy with Lunarium dust, begins to affect you. Saving the world isn’t easy, even with twenty-first-century technology. It took many hours before I discovered the secret behind the Nazi’s leap in technology.

Cinemaware has included keyboard functions for changing the game speed, pausing and resuming, turning off the sound and/or music, and toggling the CGA color palettes. The music, terribly loud and obnoxious on my PC, was the first thing to go (the sound on the Amiga version is much better). And since I don’t relate well to purple grass, it was great to be able to toggle the color palette, too.

If you’re a fan of movie serials, if you like adventure mixed with arcade action, or if you just want a shot at saving the world, then you’ll like Rocket Ranger. But don’t forget the popcorn.
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Twist & Shout is more than an indispensible utility program for people who do a lot of printing. It's actually three programs in one package: Twist prints spreadsheets or text files horizontally across your computer paper; Shout prints oversized alphanumeric characters and graphics to produce banners; and Disk Spooler II lets you send a file to a printer or to disk while you continue work on your computer.

I like software that gets me going quickly—it took me less than five minutes to get Twist & Shout from installation to the opening screen. The program isn't copy-protected, and it's guaranteed to work with any dot-matrix printer and most ink-jet and laser printers. If your printer isn't on the list, Software Toolworks promises to make it work with Twist & Shout—or your money back. It runs on IBM PC, PS/2, and compatible computers.

Twist & Shout incorporates the same instinctive menu format into all three programs. To display a menu or select a command, you use the cursor keys to highlight it on the screen; then press Enter. As a shortcut, you can choose a command by pressing its first letter, such as Q for Quit.

Twist works as a stand-alone program, but the company says it will also work as an add-in for Lotus 1-2-3 or Quattro. (Add-in means you can install the program so that it runs from within 1-2-3 or Quattro.) Twist reads 1-2-3, Quattro, and Symphony files directly, as well as any text file. Mouse support is provided when you use the program as a stand-alone. (My mouse, an off-off brand masquerading as a real rodent, worked just fine.)

Once Twist is started, you use a pop-up list box to choose the file that you want to print. Either whole files or ranges of cells (only when Twist is used as an add-in—an unfortunate oversight) can be selected, and you can add attributes such as underline, bold, italics, and color to designated characters. It's easy to set margins, paper size, character and line spacings, and whether you want bidirectional printing. Type sizes can be changed to accommodate from 28 to 120 lines per page (in draft or high-quality type style). Varying the size of your print lets you emphasize more important information.

The second member of this printing trio, Shout, lets you create a banner by printing from one to six lines horizontally across your computer paper. The size of the type decreases as the number of lines increases; a one-line banner prints letters as tall as the width of the page (generally 8½ inches), while a six-line banner contains lines about 1½ inches tall.

As with Twist, you activate commands in Shout through menu choices. When you create a new file, Shout presents a simple text editor that lets you enter and edit your information. It offers you a choice of four typefaces—Times Roman, Script, Olde English, and Sans Serif—which can be printed in one of three modes—Graphics, a slow high-quality print; Auto, a draft-quality print that forms banner letters from the letter being printed (a large D would be formed of regular-sized capital D's); and Manual, which lets you choose the character that forms the banner letters. For example, banner characters could be created with asterisks or dollar signs.

Shout also offers a set of 52 graphics in such categories as playing cards, arrows, animals, sports, hand signals, and holidays. Symbols, typefaces, and colors (if you have a color printer) can be mixed on the same line, and typefaces and colors can be changed before or after you enter text. Creating my first banner took less than a minute.

Disk Spooler II, the last of the trio, can be loaded through your AUTOEXEC.BAT file when you start your computer. That way, it's ready to use with any application, not just with Twist & Shout. An added utility, PRINTII.COM, prints any text file from the DOS prompt. Menu commands let you suspend, restart, and clear the print spool file. Although more complicated than the other two programs, Disk Spooler II is still fairly simple and its commands are straightforward.

For those who need help, Twist & Shout's user and reference manuals are clearly written and offer good indexes. Context-sensitive help is available at the touch of a function key.

At less than 60 bucks, Twist & Shout offers great value. Pick it up if you need a fast, reliable way to squeeze your spreadsheets onto regular-sized paper or if you're tired of waiting for your printer to continue working. But most importantly, get Twist & Shout if you're the one in charge of the office birthday party banners.

— Lynne Frey

Flight Simulator 3.0

The third edition of Microsoft's Flight Simulator is the latest threat to productivity in the workplace. All over the country, thousands of Flight Simulator fans who have seen the new version on their home computer have been heard to mutter, "Wow, this is great! But I'll bet it would really cook on the 386 machine I have at the office!"

If you're a fan of Flight Simulator version 2.0, take a look at version 3.0. The whole thing appears to have been recoded. Microsoft has finally done away with the copy protection, so the whole program can now sit fat and hap-

and soft drinks before you sit down to play.

— Joey Latimer

Rocket Ranger

For... Amiga—$49.95
IBM PC and compatibles—$49.95
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From... Cinemaware
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And... Apple IIgs ($49.95) and Atari ($49.95) versions are planned, although no release dates are available.

Twist & Shout prints text sideways and also lets you create banners.

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Take your Learjet in for a three-point landing with version 3.0 of Flight Simulator.

You can run the program entirely from menus, which you can access at any time during your flight. Any changes you make will occur after you've exited the menu screen—no need to reboot. The first menu, Mode, lets you choose how you want to operate the system. Normal Flight, Flight Instruction, and Entertainment are just a few of the options available. My favorite feature is the Instant Replay, which runs continuously so that anytime you do something really spectacular (like zipping beneath the Golden Gate Bridge) you can go back and see it again or even save it to disk.

If you tire of serious flying, you'll be glad to hear that Microsoft has greatly expanded the entertainment options in this version. The World War I Ace game is still here, but it's much more challenging—you can't zip over to enemy territory, land at the enemy base, and blast your foe's planes as they come down the runway anymore. Other entertainment options include a crop-duster game, formation flying with a computer-controlled plane, and an option to fly with another player over the phone lines with a modem.

The Navigation menu includes all the instrumentation you could ask for. If the terms VOR, OBI, ADF, and the like aren't in your vocabulary, don't worry; the book does a good job of explaining them. Navigation is not nearly as mysterious as it sometimes sounds. Learn a few quick facts and you can fly anywhere on the map. Autopilot is also included, but I couldn't get it to track a VOR station.

Where Flight Simulator really shines is in its View and Environment selections. Multiple windows make the combinations of views almost limitless. Windows can be dropped in anywhere on the screen. You can make them bigger or smaller, narrower or wider—it's up to you. Each window can display a variety of views or an overhead map. Don't need the instruments? Get rid of them. Want a full-screen chase-plane view as you do a loop? You've got it.

The outside environment is equally controllable. The time of day, season, wind conditions, and cloud cover can all be adjusted as you wish. You can even toss in an anvil-shaped thunderstorm or two to avoid. Morning and dusk flights are particularly stunning.

The total simulation is built around the Cessna Skylane Turbo RGII aircraft, but you can also fly a Gates Learjet or a Sopwith Camel. Each aircraft has very different flight characteristics, but changes in the basic instrument layout are minimal. Some of the Cessna's characteristics, in particular, seem different from those in version 2.0. For example, it takes a little longer to speed up and slow down. Speaking of taking awhile to speed up, wait until you try the Learjet. Jet engines must "spool up" to provide more power, and the simulation faithfully includes this fact. Come up short on a landing approach, and full throttle may not help much.

Scenery Disks used with version 2.0 can be converted for version 3.0. This conversion should also allow you to install these copy-protected disks onto your hard drive or onto a 1.2-megabyte floppy disk. If you store them this way, the next scenery area will automatically load as you enter a new zone. The conversion procedure is the one item not fully covered in the manual, but the README.DOC disk file gives you a complete set of instructions.

Aside from all this, you can create your own startup demos; use a keyboard, mouse, or joystick; choose from over 100 airports; and fly by landmarks like the Statue of Liberty. Best of all, in most of the software stores I've visited, there is little if any increase in price over version 2.0.

If you earned your wings on an old Flight Simulator version, you'll enjoy and appreciate the improvements made to version 3.0. If you're new to the hangar, this is the package to start with.
Roll out onto the runway and get ready for an air-raising experience.
— Richard Sheffield

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The Children's Writing & Publishing Center
Kids are like revolutionaries. Give one a printing press, control of the printed word, and you may be lighting a fire you can't put out. Viva la revolución.

Desktop publishing, long the rage among grownups, in effect stuffs a printing press inside a personal computer. Graphics and type combine to allow the masses to turn out a blizzard of sophisticated documents. The Children's Writing & Publishing Center (CWPC) brings the vaunted power of the press to the small people who inhabit our homes and schools. The combination of kids, computers, and CWPC may well spawn a generation that isn't afraid to write book reports, thank-you letters, and class newsletters.

The key to CWPC, and the reason it so aptly serves its audience (ages 9 and up), is its simplicity. The Learning Company, CWPC's publisher, knew exactly what to include and what to leave out.

There are only two possible document formats—the Report, Story, or Letter format and the Newsletter format. The former produces one- to four-page, one-column documents appropriate for school reports, letters to grandma, and short short stories for friends; the latter creates single-page, two-column newsletters. Each format has only two possible layouts—with a heading and without.

Having selected the format type and layout style, the pint-size publisher advances to the main editing screen. A row of boxed icons with labels runs across the top of the screen. This menu bar includes the selections Font, Picture, Next, File, and Print. The choices are self-explanatory and available by pressing a single key. Another keystroke, and an appropriate menu pops into place. Choices within these menus are easily understandable and limited, to keep confusion to a minimum. Pick Picture, for instance, and the subselections Select Picture, Move Picture, and Erase Picture appear.

Most of the main editing screen, however, is the Workspace. This is where kids type text, edit sentences, and place pictures. Both the heading (if there is one) and the body of the document are created on this screen. The only difference is the amount of allotted space and the final printed size. Kids with limited patience will like the fact that typing and correcting require a minimum of fuss.

Font selection, always an important part of desktop publishing's success, is good, if a bit limited: three small lower-/uppercase, three large lower- / uppercase, and two huge uppercase fonts. Although text can be underlined and centered on the page, the only feature worth the name advanced is one that lets writers cut out sections and erase or move them to another part of the document.

Placing pictures is as easy as typing text. Over 100 color pictures and nearly two dozen predesigned headings are included with CWPC (The Print Shop graphics can also be used). Kids select a picture, then move it to an exact spot (if it's going in a heading), or to the left or right side of the page (if it's being dropped into the body copy). They can even flip graphics backward or upside down. Text automatically moves to make way for the picture.

Saving and retrieving work is a snap. So is printing, although the selections here may mystify youngsters who aren't familiar with terms such as Slot and Card. An adult may need to configure the printer setup.

The results of all this journalistic sweat? Attractive documents, especially if a color printer is used (the ImageWriter II with an Apple II computer, for example). Print quality is good, though not great. In all my tests, the print was too light for my liking.

The 120-page manual may seem too much, but it is well organized, offers numerous tips, and serves as an adequate reference. More likely to be used, however, is the program's built-in help function, which is available at the press of a couple of keys and which can immediately answer most questions. CWPC effortlessly guides kids through the mechanics of creating and printing their writing. By funneling their efforts into limited channels, CWPC lets kids think more about what they're writing, not how they're writing. And because the final product is good-looking, kids will find it easier to show their creative writing to teachers, parents, even friends.

The Children's Writing & Publishing Center is desktop publishing for the small set.

Anything that makes kids want to write—in this video era—is top-notch in my book. As a parent, a former teacher, and a writer, I applaud a product that gets kids excited about the written word and the crafting of imagination.

I give Children's Writing & Publishing Center a standing ovation.
— Gregg Keizer

The Children's Writing & Publishing Center

F-19 Stealth Fighter
Want to really push the envelope of personal computer military simulations? Then point the nose of a Stealth fighter into the sky and hang on. Micro-Prose's latest release, F-19 Stealth Fighter, boosts graphics animation and functional realism to the blast point. With F-19, you fly a variety of missions in the most well-publicized top-secret fighter plane ever built. From your first training mission—a strike against a Libyan radar station—you move to subsequent missions in the Persian Gulf, the North Cape area of

70 COMPUTE!
Norway, and in Central Europe. Flying conditions affect the rules of engagement that you must follow and can range from cold war to all-out conventional war.

In a cold-war situation, you must use the F-19's stealth capabilities to their fullest as you sneak up and destroy your designated target and then slip away. During a conventional war, however, it's all right to take out anything and everything that gets in your way. Missions become increasingly difficult, but if you perform successfully, you can advance from second lieutenant to brigadier general while collecting a variety of service ribbons and medals.

Originally released for the Commodore 64/128 as Project Stealth Fighter, F-19 has been dramatically overhauled for the MS-DOS environment. One of the biggest improvements is the increased variety of views available to you as a fighter pilot. Besides the standard front, rear, left, and right views from within the cockpit, F-19 offers several outside views.

The Chase Plane view follows your every turn and dive, the Tactical view keeps both your plane and the enemy's plane onscreen at all times, and the Reverse Tactical view takes the enemy's perspective. There's also a Side view and even a Missile view that lets you ride a Sidewinder right into the fuselage of an enemy MiG—shades of Dr. Strangelove. Most of these views let you zoom in and out or toggle between a standard 60-degree viewing angle and a wide-angle viewing arc of 120 degrees.

Detailed briefings and debriefings are available. At the briefing screen, you are presented with a map of the mission area; you can review specific aspects of the mission by choosing the appropriate menu item. By selecting Mission Targets, for example, your primary and secondary targets show up as P and S on the map. This information is essential because it can help you design a flight plan that exploits weaknesses in the enemy's air-defense system.

Before embarking on your mission, you can select four kinds of armaments from an arsenal of 18 types of weapons. These include several types of radar- and infrared-guided air-to-air missiles as well as laser-guided and free-fall bombs. Some missions require that at least one of your four weapon pods be loaded with such things as a 135mm infrared camera (for surveillance), an auxiliary fuel container with a 1900-pound fuel capacity, or special equipment that you must secretly airlift into strategic locations.

Debriefings occur after you have completed your mission. Starting at the time of takeoff, a digital clock runs as your course is traced on a map that displays the entire mission area. The clock stops running at major events such as the firing of weapons or the destruction of targets. These events are depicted by graphic inserts similar to the computer-generated graphics used by network-news broadcasts to illustrate the unfolding of events, such as the United States' bombing of Libya.

Exploring Stealth Mission

Several man-years went into developing Stealth Mission for the Commodore 64/128 computers. The program incorporates many new design concepts. Target-hit detection, for example, is embedded within the Stealth Mission scenery structure itself. This lets the software designer easily assign a different score value to each potential target, including negative scores for destroying targets that should be avoided (hospitals, for example). Programmable scoring is just one unique feature of this third-generation flight simulator.

Stealth Mission Reviews

While we don't like to brag, we certainly can't argue with Stealth Mission reviews like these. Ahoy magazine (7/88) writes that this simulator "pushes the C64/128 envelope beyond the blue horizon, to a whole new level of animation and frame rates... absolutely incredible." Stealth Mission "... sets new standards at the top of the C64 flight simulator heap," according to Info (5-6/88). Commodore (2/89) calls Stealth Mission's combination of strategy and action "truly superior to others. Only a flight simulation this good could come from SubLOGIC." Stealth Mission, winner of the 1988 Consumer Electronics Show "Best Strategy Game" Software Showcase Award. What more can we say?

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Quicken

Most people are reluctant to change their accounting practices, preferring to muddle through with a system they understand—no matter how inefficient. Computerizing their finances sounds like a good idea, but most personal and home-business accounting packages are too complicated or too inflexible.

Quicken, Intuit's checking-account management program, overcomes the complexity hurdle by modeling itself after your checkbook and performing the same functions. You can enter deposits and withdrawals, automatically total your balance every month, and print custom checks on your printer.

Use Quicken to write checks and to keep tabs on your personal finances.

The program's interface is reasonably simple to master and avoids accounting jargon. The Write Checks screen, for example, looks just like a checkbook; you fill out the check side and the program fills out the stub and computes the new balance. But Quicken can do more than just keep your checkbook. It can set up separate accounts for home and business (or any other account you like, with no limit to the size and number of accounts) and assign each transaction to a separately named category. For example, every payment for office supplies can be tagged as belonging in the Office Supplies category; then, at the end of the year, Quicken can list every office-supply expense and tell you the total amount you spent in that category. (The program supplies a list of suggested categories for home and business transactions, but you can devise your own categories or edit the ones provided.)

When April 15 comes around, Quicken can pull out all transactions with labels that correspond to categories on Form 1040 and Schedules A, B, C, D, and E, and total them so you can enter them onto your tax return. (It works especially well with a computer tax program like MacInTax.)

Just automating the addition and subtraction of checkbook entries (no more pencils and stubs) can save you a lot of time and aggravation. And if you need to find an old transaction, Quicken's fast search feature lets you search by category, date, or amount—better than looking through old stub booklets or canceled checks. You can also tag regular payments, such as loan payments and first-of-the-month bills, and print those checks in batches. Quicken will address the checks for use with window envelopes, which are available by mail along with tractor-feed blank checks; the checks are accepted by nearly all financial institutions in the U.S.

With Quicken's report generator, you can sort transactions by payee, category, or date, and then print detailed reports for tax and accounting purposes. If you take the time to enter all your transactions—cash, credit card, savings account, dividend, and so on—Quicken can provide you with a complete statement of your financial position at any time. There's nothing like a well-organized, complete, and up-to-date financial report to convince a bank to approve a personal, mortgage, or small-business loan. (The Macintosh version includes a HyperCard stack so you can link your data with other HyperCard stacks and make use of its extensive reporting capabilities.)

Although designed for home and small-business use, Quicken can also serve a business with several employees. It tracks gross wages, state and federal withholding taxes, and FICA for each employee. Building on its basic checkbook concepts, you can set up budgets and compare actual expenses and income against the budget figures, create profit and loss statements, and track accounts payable, accounts receivable, and cash flow. Quicken will even export data as SYLK files for use in a spreadsheet. You might not use all these features at home, but it's nice to know they're there.

Any accounting package, even one as easy to use as Quicken, requires some effort to learn. You have to enter your basic financial information when you begin with the package, and again every month at check-writing time. You must also enter all checks you write manually, like checks to the supermarket, or your balances will be inaccurate.

Quicken requires that you think systematically about your money, which may be difficult to do at first. But once you develop the habit, the benefits you derive in having accurate, comprehensive, and accessible financial records, in automating routine check writing, and in knowing just what's happening to your money make the effort well worthwhile. It almost makes accounting fun.

— Steven Anzovin

TKO

Johnson hit the ropes and dropped to the canvas for an 8-count. I had him now. A couple of quick jabs and a right hook sent his energy level to zip and he kissed the canvas again. The crowd went wild, but the round ended before I could finish him off.
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a best punch, set speed and power ratios, and even decide if your fighter will tire quickly or is prone to getting his face cut. TKO lets you fine-tune your boxer's attributes. Decide on a three-round, five-round, or ten-round match and step into the ring.

You can challenge a friend in a two-player version or take on one of eight computer contenders. The disk saves the win/loss statistics of the one-player bouts; two players pummel each other just for bragging rights.

The Main Event shows you and your opponent from the chest up in split-screen. When your boxer throws a punch, you see a gloved fist slam into your opponent. Connect with an uppercut and watch his head snap back. Watch your own eye turn black when his jabs land on you. The graphics render the damage on each fighter's face as the bout progresses.

To the right of the animated figures is an aerial view of the ring. You can't control your fighter's footwork, but the boxers do move about the ring, depending on the blows being thrown. Back an opponent into the ropes or a corner and your punches increase in power.

A digital clock counts down each three-minute round, and numbered boxes indicate which round you're in and the winner of each. Beneath each fighter is an Energy Bar. Watch it carefully and fight conservatively if your energy level drops too low. Become more aggressive when your opponent's energy drops, because he'll fall when it reaches 0.

If you study your opponent's fighting style before a bout, you can set your guard position accordingly. If his strong punch is a left to the head, lift your guard. You can also protect your throat, chest, or stomach with a flick of the joystick. That defensive position remains in effect until you change it.

The nine positions on your joystick correspond to the nine target areas you can aim for. For example, the upper left position throws a left to the head, lift your guard. The center aims for his mouth and a lower right throws a right to his body. Press the fire button to throw a punch or to block your opponent's.

After each round, a statistic screen provides a blow-by-blow account of the fight, including the number of head and body blows attempted and landed. It also indicates the winner of each round.

If you're taking a pounding, press a key when you're between rounds and review each boxer's attributes. You may want to adjust your defense and concentrate on your most effective punch.

Boxing may not appeal to everyone, but fight fans will like TKO's unique first-person perspective. Instead of shouting advice from ringside, tape your hands, put on the gloves, and climb through the ropes. See if you're a boxer, brawler, bleeder, or nun. You always said you could've been a contender; here's your chance to prove it.

— Tom Netsel

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**PC-Link**

Late last year, Quantum Computer Services joined Tandy in bundling PC-Link with Tandy's DeskMate 3.0 telecommunications service and establishing the PC-Link telecommunications service. Like its older cousins, QuantumLink and AppleLink-Personal Edition, PC-Link gives almost anyone with a computer and a modem access to a graphics-intensive telecommunications service.

Because the PC-Link network supports only MS-DOS machines and is designed specifically for the PC-Link software program, it can offer many advantages over its larger (and less specialized) competitors. Menu bars, pull-down menus, windows, and dialog boxes simplify each step from log-on to log-off. A unique security feature eliminates the need for passwords by encoding your program disk and automatically verifying that code prior to each session. Furthermore, this carefully designed software/network combination automatically handles technical obfuscations like parity, data bits, stop bits, and control codes.

Such efficiency comes at a price, however. You need MS-DOS 3.2 or later, a PC with a minimum of 384K of RAM, and a modem. Any Tandy or other Hayes-compatible modem will do. The software also requires a moni-
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MODERN OWNERS: You can order on-line from our IBM Shop via the CompuServe and Genie electronic malls.
tor and a CGA, EGA, VGA, or Hercules-type graphics adapter.

The PC-Link package, available at your local Radio Shack store, includes two 5¼-inch disks, a 3½-inch disk, two manuals, and a registration certificate. It also entitles you to one month of free basic access (nights and weekends) and two hours' worth of time on PC-Link Plus, the network's premium service.

Before logging on for the first time, you must configure the software. Use your mouse to move the cursor to Set PC-Link Info in the menu bar, or hit F3 from the keyboard. Select Set Telephone Info; then choose the appropriate modem speed and enter the correct phone number for calling from your area. After that information is accepted, activate the Set Modem Info window and complete a few additional details.

You're now ready to make your first call. Select the menu bar's Sign On option: As soon as the network answers, it recognizes new users and presents a sign-up screen. The system requests the usual personal details, poses a few survey questions, and hangs up. Quantum personnel will call back to verify your identity. Once the verification procedure is completed, you can reconnect and begin exploring.

As with other information services, PC-Link's world is divided into a hierarchy of sections and subsections. However, everything available falls into one of two major areas—basic PC-Link and PC-Link Plus.

Basic PC-Link contains ten subdivisions, including Tandy Customer Support, Reference Desk (where you can search Grolier's 20-volume Academic American Encyclopedia, electronically thumb through thousands of cross-referenced articles, or research colleges and universities), the Quiz Center, and the Software Buyer's Guide (for up-to-date information on new software releases). Keep up with the latest through NewsLink Headlines, and track the market with Dollars and Cents.

Premium services are grouped together in PC-Link Plus. From here, you can send and receive electronic mail, move freely through "conference rooms" for group discussions and scheduled lectures, or shop in an electronic mall. Publisher's Connection provides a direct link between software users and publishers. Students can request homework help from experienced teachers at the Learning Center or take courses at PC-Link's online college (no college credit, but tuition is low). Software buffs can download public domain and shareware programs or preview commercial programs.

One thing that sets PC-Link apart from more established competitors is its fee structure. For $9.95, you have unlimited access to PC-Link services from 6:00 p.m. to 6:00 a.m. weekdays and all day weekends and holidays. Prime-time users pay a surcharge of $0.15 per minute. Each minute on PC-Link Plus costs an additional $0.10, regardless of time of day. Charges are the same no matter what the speed of your modem, so owners of a 300–bits-per-second (bps) modem can justify upgrading to a 1200– or 2400-bps unit.

Investigating a subject in an online encyclopedia is just one of the electronic avenues you can explore with PC-Link.

Overall, Tandy and Quantum have created a very enticing service. Dollar for dollar, PC-Link is hard to beat. In ease of use, it sets a new standard that others will be hard-pressed to match. And while it's true that broader-based services generally boast longer membership lists, all PC-Link users share a common interest—MS-DOS computers. PC-Link's computer forums and software libraries ignore all but PC-related material, but many users will have no interest in other computer operating systems anyway.

Whether you own a true-blue IBM PC or a compatible like a Tandy 1000 SL, if you're interested in serious telecomputing, you should test-drive the PC-Link demo. It could be the introduction you need to the electronic world beyond your monitor.

— David Stanton
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<td>AR1: Battlezone, Cosmic, Shoot Gallery, Realtime, more!</td>
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<td>AR2: Bushido, Ninja, Frogger, Chess, Artill, Sub, more!</td>
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<td>AR4: B.M.D., Wiz, Xeowon, Striker, Stargate, more!</td>
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<td>AR5: Pacman collection, PC Tennis, Pong, more!</td>
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<td>AR6: Golf-Dayslade, Ohio South-Realistic features!</td>
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<td>AR9: Defender, Fireballs, Q-Bert, Heatl, more!</td>
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<td>AR11: 1938 Ford Driving Simulator, 3 driving courses!</td>
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<td>AR20: Defend, Backgammon, EGA Risk.</td>
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Tandy-Built

Agreements with Digital Equipment (DEC) and Panasonic have boosted Tandy's prominence in the computer-manufacturing arena. While other PC-compatibles makers fight for market share, the Texas consumer electronics giant has roped a lucrative deal for its Fort Worth computer-factory corral.

Under the DEC agreement, Tandy will build personal computers according to DEC design specifications. Then DEC will distribute and market those computers under its own name. Famous for its minicomputer systems and its workstation networks, DEC has never been able to match that success with its own PCs, a line starting with its ill-fated, noncompatible Rainbow.

DEC says its customers will be able to integrate the Tandy-built computers into existing and planned minicomputer installations. Complete design specifications have yet to be released.

Ed Juge, Tandy's director of marketing planning, says that companies like DEC are looking to capitalize on Tandy's ability to manufacture computers efficiently, reliably, and inexpensively. He says Tandy will be able to increase its own market share through the venture because the agreement will give Tandy added credibility with business customers.

Panasonic has also sought Tandy's help in building personal computers to be sold under the Panasonic label. As a leading consumer electronics company, it hopes also to capitalize on Tandy's economies of scale. It's less expensive for Panasonic to use Tandy's facility than it is for Panasonic to build its own computers.

There will be some important differences between the Panasonic and Tandy computers, even though both will be built at the same facility. For example, the Panasonic-brand computers won't offer the DeskMate interface or MS-DOS in ROM, and they won't carry Tandy's sound chip. Both the ROM and the sound features are included with Tandy's 8086 and 8-bit 80286 computers like the Tandy 1000 SL and 1000 TL.

Even with those differences, it will be hard to avoid conflict when it comes to sales. "They will compete with our machines; there's no question about it," said Juge. "Anybody who sells a PC is a competitor." Juge went on to say that if Panasonic hadn't asked Tandy to manufacture its machines, it probably would have found another supplier. "If you have to lose market share, you might as well lose it to yourself," Juge said. Tandy will supply all the raw materials and oversee the entire construction process.

Tandy has been building personal computers at its Texas plant for nearly ten years, says Juge, and in that time has radically cut the number of machines produced that are prone to failure. Testing makes up 75 percent of the manufacturing process; only 25 percent of the process is actual construction.

"Complexity is killing this industry," Fregger said. A lot of people don't understand how productive they can be on computers, he explained, because they are turned off by the industry's emphasis on features. "To reach that 80 percent of the population we haven't reached yet, we have to talk about what computers can do." He hopes that by introducing customers to a simple arcade game like Pharaoh's Revenge he can broaden the appeal of personal computers. "The offer is a little step to show that computers aren't as complex as people think."

Fregger said that computers haven't yet become a mass consumer product on the level of VCRs because the industry is afraid that if it goes after less computer-sophisticated customers it will lose some of its established base: enthusiasts and hobbyists. "We're selling to the same customer over and over," he said.

Software International isn't just interested in games, however. The company also markets a line of software, called ByteSize, with what Fregger calls "targeted features." Packages include Home Inventory, Mailing & Phone List, Stock Portfolio, and Hard Disk Log. A simple word processor and personal finance package are in the works, bringing the total number to 19. The packages retail from $21.95 to $29.95 and are available at most software stores and some computer-dealer outlets.

Fregger said the ByteSize products let users become productive without bogging them down with heavy features and unintelligible documentation. "They do only the things you need to do to get the job done," he said.

To receive a copy of Pharaoh's Revenge, send $5 and a letter detailing your frustration with complex computer games to Brad Fregger, Publishing International, 333 West El Camino Real, Suite 222, Sunnyvale, CA 94087. The game is available for IBM PC and compatible, Apple II, and Commodore 64/128 personal computers, so be sure to specify which version you want.

— Peter Scisco

An Offer You Can't Refuse

If you believe Brad Fregger, president of Software International, almost every flight simulator package sold in this country ends up on a closet shelf. What customers bring home for computer entertainment too often ends up being hard work—and who has time these days to work at being relaxed?

To underscore Fregger's point, Software International will sell its Pharaoh's Revenge arcade-action game for $5.

Fregger said he got the idea after he visited several computer dealers throughout the northwest United States. He said that those dealers told him that most first-time computer buyers took home MS-DOS clones, and for entertainment they almost always left the store with a flight simulator because simulators have become synonymous with computer entertainment.

"It makes me sick to my stomach to hear that," Fregger said. "Most of the people I talk to in the industry can't get off the ground with a flight simulator." What happens, he explained, is that computer entertainment packages are perceived as too difficult to play—which means losses to videogame makers. "Nintendo is fun. Computers are difficult and complex. That's the attitude."

"Complexity is killing this industry," Fregger said. A lot of people don't understand how productive they can be on computers, he continued, because they are turned off by the industry's emphasis on features. "To reach that 80 percent of the population we haven't reached yet, we have to talk about what computers can do." He hopes that by introducing customers to a simple arcade game like Pharaoh's Revenge he can broaden the appeal of personal computers.

"The offer is a little step to show that computers aren't as complex as people think."
Court Games

And you thought games were only for fun. You never knew they were serious, serious business, did you?

Nintendo, the home-arcade-game giant, has been charged with violating federal antitrust laws in a suit brought by Atari Games (a privately held company not associated with computer manufacturer Atari Corporation).

In its $100 million suit, Atari Games claimed that Nintendo inserts lockout chips into its game machines and into its cartridges to prevent game cartridges made by other manufacturers from working on the Nintendo system. The only reason for such chips, claimed Atari Games, is to monopolize the making of Nintendo cartridges. (Nintendo manufactures all cartridges for its licensees.)

According to the complaint filed in December, Nintendo controls the American home videogame industry, with 80 percent of the system market and 100 percent of the cartridge-manufacturing market. Atari Games plans on selling its Nintendo-compatible cartridges (Atari Games has introduced several) through its Tengen subsidiary.

Hitting back, Nintendo sued Atari Games and Tengen in January, charging breach of contract, trademark violation, unfair competition, conspiracy, and violation of federal racketeering laws. Atari Games used confidential information available to it as a Nintendo licensee, said Nintendo, when it put together its compatible cartridges. Nintendo struck another blow by revoking Tengen’s Nintendo license and threatened more charges if its engineers found copyright infringement or patent violations in the Tengen cartridges.

Meanwhile, the Software Publishers Association (SPA), a group of more than 400 software developers and publishers, threw its support behind Tengen. Nintendo created a shortage of cartridges by its policy of controlling all aspects of cartridge manufacturing, the SPA said as it applauded Tengen’s move to produce Nintendo-compatible cartridges.

Although third-party cartridges would break the Nintendo lock and probably reduce prices and make more games available, many potential publishers of such cartridges voiced concern over the possibility of a future game glut. Everyone remembers the Atari videogame debacle in the early ‘80s, when cartridge manufacturing was uncontrolled and games became so plentiful that prices took a nose dive and a lot of publishers took it on the financial chin.

No one wants to replay that game.

— Gregg Keizer

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NEC’s corporate motto, “Computers and Communications,” becomes tangible with the introduction of the company’s HELP Phones. The telephones, developed to address emergency needs, use 512K of RAM to manage sophisticated emergency monitoring and assistance call services as well as to digitize outgoing messages.

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Upon sensing an emergency or having an emergency call initiated by either the push-button or remote unit, the phone automatically calls a central Help Center. The HELP Phone transmits a digital code identifying the owner and type of emergency, followed by a digitally recorded voice message from the owner. When the emergency is verified, or if there is no answer when it calls back, the Help Center notifies the appropriate local authorities.

In addition to its emergency features, the phone includes 17 programmable one-touch dial buttons. Prices for the HELP Phone range from $119 to $199, depending upon the model. NEC’s Help Center is staffed 24 hours a day and is listed with Underwriters’ Laboratories. There’s an annual fee for the Help Center service.

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MARKET CGA (BUS17) Per toms compiles a spreadsheet system, etc. (CGA version is BUS16.)
Any Boob Can Take a Nintendo Cartridge and Shove It into a Slot

continued from page 88

meetings, and any local rally held by SWAN, the soon-to-be formed Senators' Wives Against Nintendo coalition. Here's the official SWAN song, with deepest apologies to Meredith Willson and to Professor Harold Hill.

"Wait a few billion nanoseconds, friends! Either you are deliberately ignoring significant data or you are unaware of the potential of disaster indicated by the presence of a Nintendo game machine in your home. A Nintendo game... just because we're all busy finding our own space and channeling spiritual entities... just because we listen to new-age music... because it's 1989... doesn't give our kids the right to surf along the wave of life using a light pistol as a crutch.

"Now I'm a computer-game player, a Mac/Amiga/Atari/PC game player, and I'm always proud to boast. I consider the time I spend in front of a CRT to be golden. Helps develop programming awareness... solid keyboard technique, you know... spreadsheet savvy. Did you ever try to fly between the World Trade Center Towers at Mach 3? Well, just as I say, it takes reading skills, intellect, and mechanical dexterity to install games on a PC. But I say any boob can take a Nintendo cartridge and shove it into a slot... and they call that entertainment.

"I'm telling you, it's the first real step on the road to pixelization. First it's a little bit of Duck Hunt. Then Legend of Zelda. And before you get back from your week at Club Med, your kid will be playing Super Mario Brothers 2 for Oreo's in a Cardin jogging suit... listening to some out-of-town video guru... hearing tell about power-pad controllers... not a wholesome joystick—no—but the kind where your kid stands right on the switches!

"Now friends, you can grok what I mean. You got two-, four-, six-, eight-hundred K on a disk... those disk drives spell the difference between a technocrat and a prole... that starts with P which rhymes with T which stands for Tape.

"We got trouble. Right here in Silicon Valley... with a capital T without a V... that stands for Tapes. We got trouble... right here in Silicon Valley. We've got to figure out a way to keep the young ones conscious after school.

"Our children's children gonna have trouble... oh, we're in terrible, terrible trouble... I'm talkin' 'bout the V-necked Reebok young ones... peckin' in the Toys "R" Us window after school. Hey, look friends—we got trouble right here in the Valley... with a capital T. Hey, can't you see we're played for fools?

"Now all week long our Silicon Valley youth will be obliteratin'... blitterin' away aliens, Nazis, PR folks, too. Get the cart in the slot... never mind taking mom in for liposuction or swabbing the Jacuzzi. Never mind pumping gas for the parents until they're caught on a Saturday night with the BMW empty, and that's trouble... oh, we're in terrible, terrible trouble. That game designed by the Kanji lackeys is the devil's tool. Hey, look friends—we got trouble in Silicon Valley... we're in totally awesome trouble with a capital T! Hey, where's the bric... let's go to the pool.

"Now all you folks are the right kind of parents... I'll be perfectly frank... did you ever wonder what kind of conversation goes on while they're loofoin' around that game? They'll be punchin' out Tyson, doin' Double Dragon, mowin' down Contras, hangin' out all night with Teenage Mutant Ninja Turtles, braggin' all about how they're gonna get brand-new wireless controllers. One fine night they'll leave your living room and head direct for Tokyo... stainless steel balls, springed levers... Pachinko! Gonna drag your son and my daughter down to the depths of that mechanical mind drug! Friends, the bullet train has your name on it!

"Trouble... right here in Silicon Valley, with a capital T... don't look at me... they're your kids, too. Hey, look dudes—we're in trouble, I mean gnarly trouble... remember windsurfing. MTV, and righteous brew?

"Parents of Silicon Valley... heed the tell-tale signs of video co-option! When your kids go out, are the lime green high-top sneakers retied around the waist? Are there power-controller callouses on your index fingers? Are they starting to memorize jokes from poorly dubbed Japanese sci-fi? Are certain words creeping into their conversation? Phrases like Power up and Go for it, Mario!?

"Well, we're in trouble—me big-time, wide-screen trouble. If they don't learn Lotus 1-2-3, then they'll all be fools. There's no golden parachute future when your rip cords are tied to video hog slop... we're beggin' you, please..."

"Say No to sleaze.
"And take up pool."
Those of you who were expecting major-league coverage of the Winter Consumer Electronics Show (CES) would be well advised to do an impromptu shuffle of your expectations. I had intended to attend CES in January, of course, but certain things stood in the way. Money, for instance.

The advent of the tax-filing season and its attendant liabilities weren't the only things moderating my yen for CES. Trying to take in both Winter COMDEX and CES typically means spending eight days in Las Vegas over the course of seven weeks. That may be fine for inveterate gamblers and lounge lizards, but it usually takes me at least four months to recover from a typical run of Vegas trade-show press parties. Winter COMDEX normally occurs in the first two weeks of November, which barely gives one enough time to wake up by Thanksgiving. Despite a prolonged relationship with a case of generic aspirin, I still spent most of Thanksgiving dinner discussing the future of OS/2 with the turkey.

When January rolled in with the New Year, the idea of spending another three or four days in Kenoland was about as appealing as a John Travolta film retrospective. CES just isn't that much fun anymore for journalists covering personal computers. In recent years, that part of CES dedicated to home computers has been steadily eroded and encroached upon by Nintendo and Sega videogame and cartridge-software exhibits.

In fact, the only interesting rumors floating around before the show were that Nintendo and/or Sega would unveil their new game machines based on 16-bit processors and that Commodore would publicly or privately show an under-$200 home videogame machine that would essentially be an emasculated Amiga 500. Both rumors turned out to have as much substance as your typical Apple "look and feel" lawsuit. I got several firsthand reports from friends who had to attend, all of them punctuated by uncontrollable yawning.

While most of the computer press talks down when the subject of Nintendo comes up, I'm in no position to take potshots. Back in 1973, Nolan Bushnell's Pong, the first hit commercial videogame, showed up in a local tavern I frequented on a semiprime basis. In a desperate effort to save the bulk of my disposable income, I shelled out over a hundred bucks for the home version the moment it hit my local Sears Roebuck. Three months of nonstop high-pitched pings convinced most of my neighbors either that my apartment housed a government radar installation or that I was watching reruns of "The Enemy Below" 24 hours a day.

I graduated to the Sears Video Arcade machine, the first available incarnation of the Atari 2600. The 2600's graphics may have been crude, but they were in color. For months, the only available cartridge was Land/Air/Sea Battle, which, like disco lessons at Arthur Murray, served up two dozen monotonous variations on a mildly amusing theme.

In time I grew tired of the blips, bloopes, and beeps and turned my attention to microcomputers. The hook was set one Saturday afternoon by an Atari 800 running Star Raiders. The hook hasn't come loose yet. While little of my computing time today is spent playing games, I'm never averse to booting up new entertainment titles for a quick look.

What's the point of all this witless meandering? Namely to provide a framework for stating that I don't see any imminent threat to the youth of America in the Nintendo craze. I don't care for Nintendo games, but I care even less for endless local news vignettes and "20/20" segments on Nintendo fever. Anyone whose brain cells are more or less intact may recall that in the early eighties we managed to survive tidal waves of truly distasteful Atari VCS games such as Porky's, Texas Chainsaw Massacre, and gunky raunch like Custer's Revenge. Last time I checked, shopping malls were no longer peppered with arcade zombie six-year-olds panhandling quarters, and the words Coleco and Intellivision have vanished from the vocabulary of prepubescents.

I can't find fault with the kids or manufacturers of videogames—check out mom and dad first. Parents who would rather plunk their kids in front of the Nintendo eight hours a day than spend time with them themselves are probably much less interesting than the games the kids play.

The personal computing industry can put down dedicated videogames, but it's a resoundingly hollow denunciation. Much of the pontification is a product of financial pixel envy. Check out Operation Wolf on the Amiga. It's a lot bloodier than on Junior's Nintendo.

As a public service to the guardians of our taste in entertainment, I'd like to provide a prefabricated speech suitable for delivery at PTA, Jaycee, or Young Republican continued on page 86
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