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By Phil Wiswell

PLAYING AROUND

The new electronic games are more than just turned-on toys

The screen flashes. The player has only one laser base left and the aliens have dropped to within one row of landing on earth. But the player doesn't panic; he isn't even worried. Spreading his legs a bit, he goes into a lower crouch for better



THE BRIDGE CHALLENGER (Applied Concepts, \$350) uses a micro-computer to bid (using conventional systems) and play according to standard bridge rules) one, two, three or all four hands in a game of bridge. The electronic card player sets the individual hands on separate sections of memory so you can play north with the computer as your partner against two separate computers as east and west. It's the easiest way we know to learn



GREAT GAME MACHINE (Applied Concepts, \$350), using the **MORPHY EDITION MASTER CHESS** cartridge (\$114), plays the strongest game of chess commercially available that we've tried. It also accepts cartridges for checkers, blackjack, reversi (popularly known as Othello) and others soon to be available.



SLAP SHOT (NPI, \$38), at left, uses a large display screen and offers three skill levels. As in *Air Hockey*, you're playing both offense and defense—trying to score as well as defend your goal.

SKITTLE BALL (NPI, \$38) is uniquely designed for two or three players. Each defends a goal against the electronic ball, which moves faster every time it goes through the acceleration lane in the center, and one by one players are eliminated.

balance. Wrists grip the controls tightly. Knuckles are white. Eyes red. He fires at a furious pace, neatly clipping the phalanx of Space Invaders into a tight group of eight in the center of the screen. Then he goes after the mother ship. Direct hit! Score 100 bonus points. Back to the eight invaders, the player finds seven of them easy targets. The eighth zips back and forth. Sweat drips from the player's forehead and he lifts a hand to wipe it from his eyes. Before the hand returns to the control, however, the last laser base is destroyed. Game over. Score: 5850. Not quite good enough. The player bangs his fist, angry at himself; he pounds another quarter into the slot, takes a deep breath and eases himself back into the fantasy for another ten minutes.

AIR TRAFFIC CONTROLLER (Bandai, \$40) is a simulation of a flight tower's control room, and it lets you try to juggle planes landing and taking off on different runways, at different speeds and altitudes, heading for different flight paths. The object is not to create a disaster. There are four skill levels, from Apprentice to Senior Controller, and the number of planes you have to juggle increases accordingly.

The player in this honest-to-pinball scene is not a greasy-haired, dirty-blue-jeaned pubescent hanging out for want of something better to do. He wears a conservative three-piece suit, is 45 years old and works in a Wall Street investment-banking firm. Why does he faithfully visit an electronic arcade on his lunch hour every day? "I do a lot of high-pressure business," he says, "and I find that by noon I need some form of release to get me through the rest of the day. Some people go to health clubs; some sit in the park; I kill Space Invaders. It's a good challenge."

Does such an aggressive attitude toward violence sound antisocial or deviant to you? Then you've been buried too long in your comic books.

We'll admit this much: It's going to be hard to explain the existence of tens of thousands of Space Invader machines to outer-space aliens if and when they come to earth. But the objectives of Space Invader play do not include military training. We don't expect to use these skills to exterminate

extraterrestrials. Just to win friends, impress our mothers and pass some time in an amusing manner. Ours is a culture fascinated with special effects and science fiction, fantasy and imagination. Thus, the explosion of Star Wars-type arcade games several years ago.

There's been much argument among psychologists about video and computer games such as *Space Invaders* in which the object is to kill, kill, kill. Some say this sort of activity is a good way to vent your aggression; others say it's a good way to build it. Most are not really sure *what* the implications are—if any. Comments Sam Morris, a Ph.D. in clinical psychology from the University of Southern Illinois who has a strong penchant for playing video games himself: "A lot of amateur psychologists talk about the 'hydrant



THE REMOTE CONTROL VIDEO COMPUTER SYSTEM (Atari, \$300) lets you play Atari video games like *Space Invaders*, *Asteroids*, *Circus Atari* and *Night Driver-43* in all-by remote control from up to 50 feet away from your TV set. All cartridges for the old VCS work on this newly designed system. The hand controls have heat-sensitive buttons for resetting or selecting game play.

theory' of letting off steam. That theory suggests that if aggression is a force that builds up, then it should be vented. However, most research shows that physical aggression—for example, hitting a punching bag—tends to make one act even more aggressively. With video games, where the aggressive actions are not so physical, this has yet to be determined."

Morris notes other reasons for video game popularity. "It's a little like juggling," he explains. "You're testing your hand-eye coordination, and it's human nature to constantly test yourself. Once you learn to fly down the hill on your sled, you feel an urge to do it faster, or riding backward, or standing up. The challenge





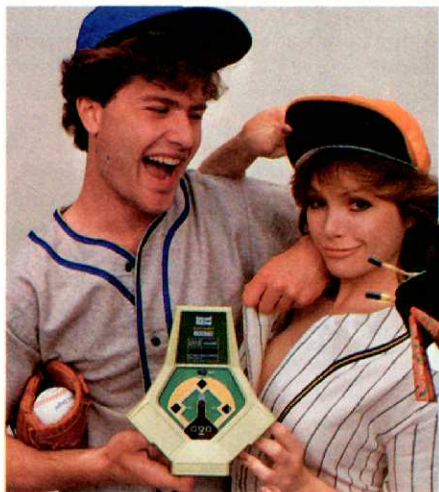
Remember Stratego, a board game of capture the flag in which you couldn't tell one of your opponent's pieces from another? This new game uses the same idea, but the pieces have greater mobility and, when they go into combat, the computer determines the outcome without revealing the identity of the pieces. **THE GENERALS** (Ideal, \$30) is one of the best two-player strategy board games available.

we like to present to ourselves know no limits. And games like Space Invaders or Asteroids, with their constantly out-of-reach goals, provide an excellent testing ground." Why not test yourself against another human? "Some people are shy," Morris continues. "They like to be sure of themselves. In a video game, they find an opponent who will not criticize the way they play. You don't ever feel embarrassed by a low score, because the machine will not remember you once you feed it another quarter."

Adults are finding a new form of entertainment not only at the arcade but also at home, in the form of hand-held and tabletop electronic games as well as video



SPLIT SECOND (Parker, \$40) is the only hand-held game in which a hundredth of a second can decide the outcome. Actually, Split Second contains eight different games (everything from auto racing to invisible mazes), which test reaction speed, dexterity and memory. Unique among hand-held games, the computer-controlled play automatically slows down or speeds up as a player gets worse or better.



The most advanced ball park to fit in the palm of your hand, **HEAD TO HEAD ELECTRONIC BASEBALL** (Coleco, \$35) has everything you'd want but the peanuts and beer. For two players at a time, the machine allows bunting, walks, relief pitchers and pinch hitters; it even computes the players' batting averages!

games. Like arcade games, the home versions have realistic sound effects and sophisticated levels of play; but since they don't require quarter after quarter, they're even more addictive. What started the revolution was the development of the silicon microcomputer chip, which is now used in consumer products ranging in size from wristwatches with a bowling game inside to programmable dishwashers. But the major users of 4-, 8- and 16-bit micro-computer technology are the owners of toys, games and personal computers.



Shake hands with the latest in robot chess players—the **ROBOT ADVERSARY** (Novag, \$1299). This machine not only plays chess; it also sets up the board and moves all its pieces (capturing yours!) with its own hand. Very satisfying to beat that hand. Unnerving to lose.

Currently on the market are more than 400 hand-held electronic games and toys, half that number of video-game cartridges and twice that number of preprogrammed computer-game cassettes. According to the "Toy Manufacturers of America," a trade association, these electronic playthings combined accounted for more than half a

Othello fans who can't always find a good opponent will be delighted with **COMPUTER OTHELLO** (Gabriel, \$100). Strategy is the name of this game, and no matter how refined you think yours is, Computer Othello will give you a run for the money. Since it uses a liquid-crystal display, you'll get more use out of the same batteries than with conventional LED games.



billion dollars in sales at the retail level last year. The only factors keeping that sales figure from skyrocketing are a shortage of programmers and an increasing number of consumers who have become more discriminating when it comes to spending extra cash. Traditionally, the games industry has been considered, and has proved to be, recession-proof, since it's a comparatively inexpensive form of home entertainment. But the prices and quantities of electronic games now glutting the market are testing that theory to its limits.

What's not yet out is just around the corner. At trade shows, Atari has been showing a new tabletop game called



WORLD CHAMPIONSHIP FOOTBALL (Mattel, \$70) is the latest entry in the electronic gridiron. One player controls offense while the other controls defense, each using a keypad control; you can also play it alone against the computer. You can really program a lot of strategy into four quarters: inside kicks, blitzing linebackers, quick kicks, field goals...



INTELLIVISION (Mattel) comes in two separate parts—the **MASTER COMPONENT** (\$300) and the **KEYBOARD COMPONENT** (price not available at presstime). The former is the most advanced video-game system available, with superb graphic details and a well-planned design. With it you can play games like *Space Battle*, *Baseball*, *Basketball*, *Horse Racing*, etc. If you fit in the Keyboard Component, the system becomes a home computer to plan budgets, figure taxes, lose weight, learn French—the works.

Cosmos, which uses a holographic image to create a three-dimensional display. But Cosmos, impressive as it is, won't debut until next year. This year, Atari has a new video-game system with wireless, remote hand controls, four new game cartridges (including such arcade favorites as *Asteroids* and *Missile Command*), plus four computer games for their Atari 400 and Atari 800 personal computers.

A major mover of home games, Atari estimated that last year's market for its

Video Computer System (TV games) was about 20 percent larger than its production capacity. Of 73,000,000 televisions in the U.S., 4 percent are hooked up to Atari's game system, and the company believes it can eventually reach between 20 percent and 40 percent. To help accomplish this, it has signed soccer star Pelé to do a tour of five European countries promoting Atari's Championship Soccer.

Mattel is revealing new video games for Intellivision, a keyboard that turns Intellivision into a home computer, computer cassette tapes, an electronic board-game version of the popular *Dungeons & Dragons*, two tabletop games using fully articulated figures and vanishing-perspective art for more realism, plus four new hand-held sports and action games. Mattel is even into computer chess and backgammon. Plans for the future: board and action games that work by voice recognition and video games that have a computer voice, like Hal's in *2001* (called voice synthesis, already in use with some of Intellivision's cartridges).

Each game seems to develop its own personality and, as it beats the hell out of you on its highest level, you begin to say things like: "Did you see what he did just then!? No fair—this machine cheats!"

However, we've play-tested all the games on these pages and can assure you that they don't cheat and they're not human. They represent the best of this year's new electronic games, the ultimate challenge of the 1980s: man vs. machine. According to our play-testing, the score is machine 100, man 0. If they sell half as well as they play, we have a hot tip for you: Buy stock in battery and semiconductor companies!



LIGHTFIGHT (Milton Bradley, \$40) is a fast and furious two-player battle of reaction time set in a tabletop game-board. You feel as though you're

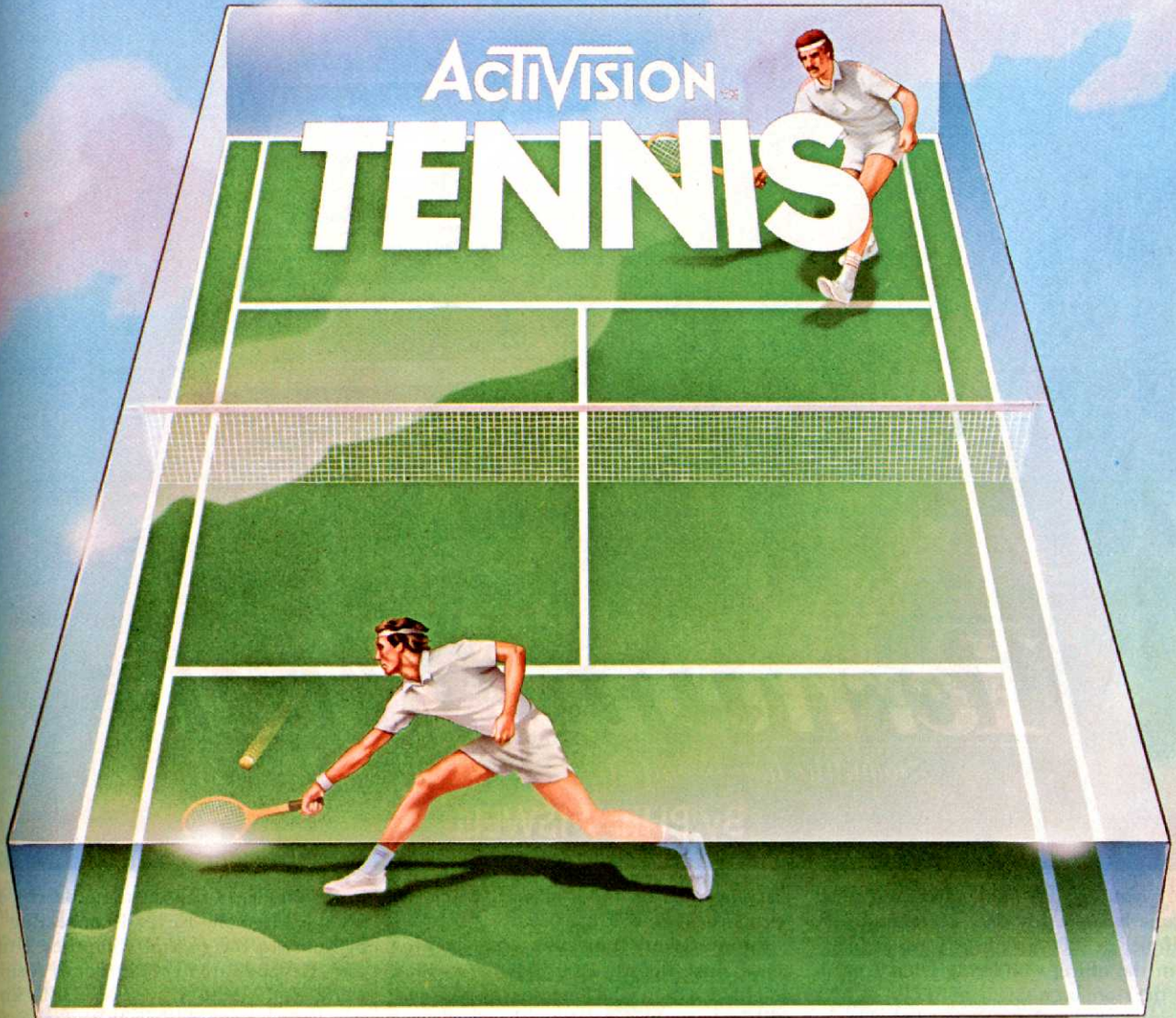


An electronic dungeon with secret rooms, passageways, hidden treasures, demons, magic spells and much more, all controlled by a microcomputer in a touch-sensitive board game? That's what **ELECTRONIC DUNGEONS & DRAGONS** (Mattel, \$50) offers to one or two players at a time. The computer tracks each player automatically, giving clues, by sound, to the location of beasts and booty.

dueling with laser swords as you try to be first to hit the computer-selected targets.



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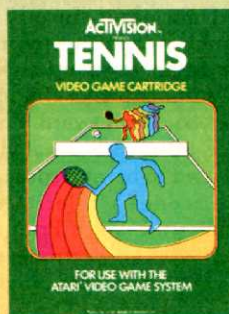
But, don't expect an ordinary video game. Tennis by Activision is something else.

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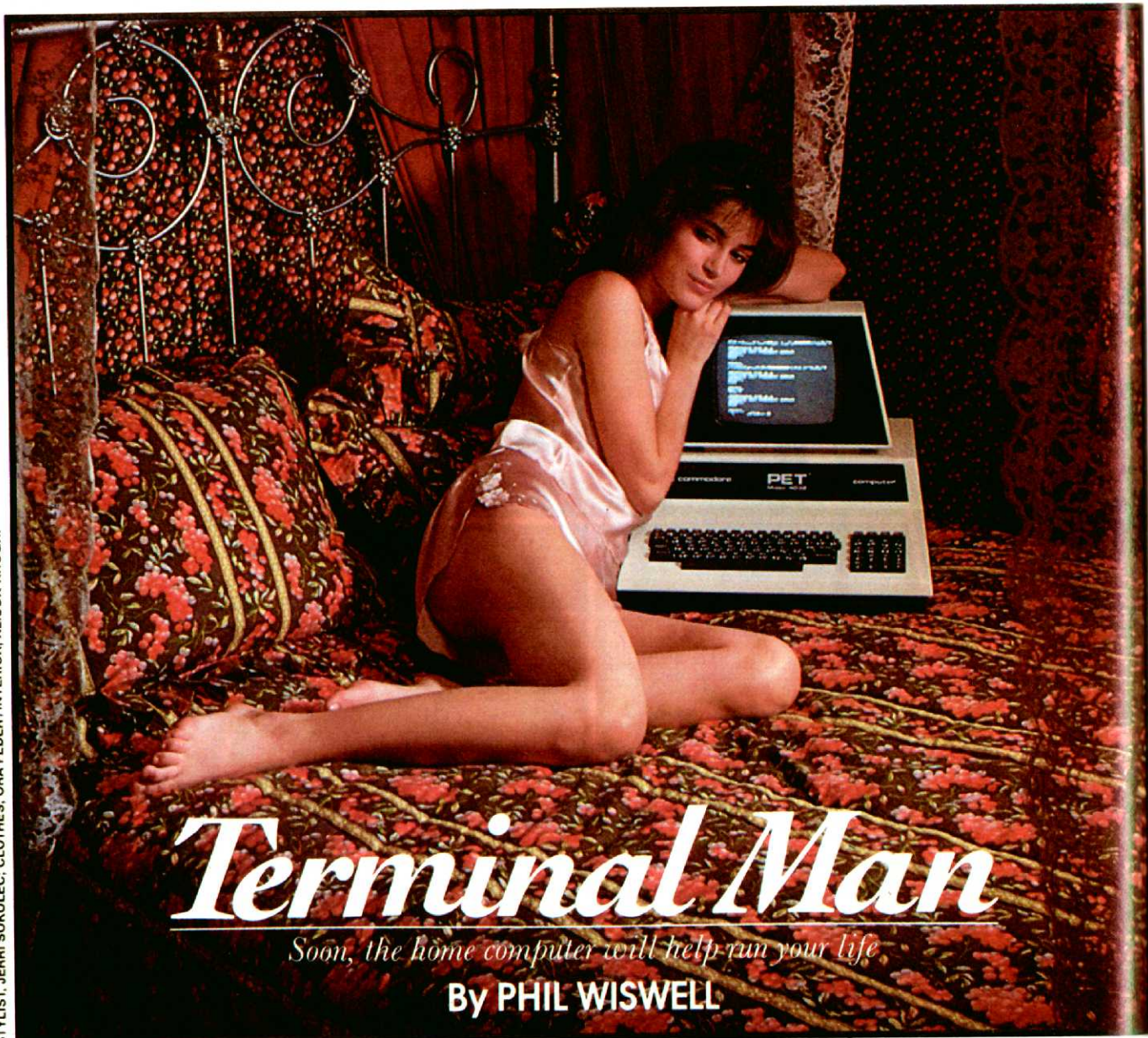
And that's one bit of realism we know you won't miss.

Tennis by Activision. Own one.



ACTIVISION™

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Terminal Man

Soon, the home computer will help run your life

By PHIL WISWELL

Ten years ago I would have been in a panic by now. My date is coming over for dinner at 8:00 and here I am at 5:30, still in the office, wondering what I need from the store on my way home.

Picking up the phone on my desk, I hit a single button that dials my house, where an Auto Answer MODEM hooked up to my computer system answers. My date likes seafood, so I ask my computer to give me a listing of fish recipes from the "Kitchen File." I select Stuffed Flounder; the computer suggests mushroom caps and snow peas as a side dish, and my office printer spews up a shopping list: 2 flounder fillets, ½ pound backfin crabmeat, 1 bunch scallions, 2 tomatoes, ½ pound mushrooms, ¼ pound butter, 2 lemons. I type a request for the "Wine Cellar" program, then ask about my favorite bottle. An on-screen message indicates "Wine supply fine," which means there are at least three bottles of my favorite soave left. Before hanging up, I mention that I'll be home by 7:00. (The main monitor in the den will instruct the basement system to switch off the solar

tracking unit on the roof and switch on regular heat by 6:30.)

I arrive at my front door with the groceries just before 7:00. My next-door neighbor, a man who longs for the past and will have nothing to do with computers, comes over. He wants to complain that my sprinkler system on the lawn doesn't turn on at the same time every day, and that his kids get soaked playing in my yard. I tell him that the central computer, which monitors both outside and inside direct sunlight and humidity, turns the sprinklers on during the most efficient time of day. "You're gonna suffer someday when that thing breaks down," he scoffs and walks back to his yard. I turn to the Master Voice Entry Box, located where the doorbell used to be, and speak into it, waiting a few seconds while it runs my "hello" through the Voice Print File. "Good evening," says an electronic voice as the front door swings inward. Lights are on in the hall and kitchen. The house is warm.

I push the door shut and it locks automatically (there are no keyholes or knobs).

In the kitchen, I deposit the groceries and hit the Intercom-Keypad connecting me by voice to the central computer. (Intercom-Keypads are in every room.) A single word lets the Auto Answer MODEM know that I'm now at home, and although it will still answer the phone, it will give a different message. I then prepare the foods and leave them in their proper places—a pot on top of the stove, a baking dish in the oven—and I program them to be properly cooked by 9:00. An Operations File manages all kitchen appliances and can orchestrate a dinner.

In the den, I begin reading the day's electronic mail off the monitor screen, displayed one letter or message at a time. For important correspondence I have the electronic printer give me hard copy. "Occupant" letters I erase forever. Some items on the screen are short messages from friends, relatives and business associates, and I quickly type out a few responses (which, by the way, are received before the next one is typed). The last four items in the mail are bills, which I send instructions

to my bank to pay. Then I enter expenses. The front door opens on my vocal command and closes behind me as I head out for my daily five-mile run through the woods. Back inside the house, I take two minutes with the "Health Monitor" program, which takes and records my blood pressure and heart rate, and will indicate when I'm possibly under too much stress. But tonight is another good report, and I hit the shower.

Just time enough before Susan gets here (she's the woman I met through a computer dating service) for me to read the news—wire-service stories my computer has selected from subscription services. It is programmed to select only the stories that apply to my various fields of interest, and these are printed on the screen one after another. I have hard copies made of those I wish to study further. The closing stock quotations on companies I'm interested in come on next, and then the daily sports results. I type two quick messages to my broker and my banker, instructing them what I wish done tomorrow.

At 8:15 I hear the sound of Susan's voice at the front door coming through the intercom. As with all my friends, her voice print is in the computer memory, and as long as there isn't another female in the house already it will let her in automatically. Believe me, this saves a bit of embarrassment. I hit the intercom connecting me to the den, where the master system is located, and ask for music—classical. *Afternoon of a Faun* begins to flow through the house as I hear the front door close.

During cocktails in the living room, we can smell the aroma of crabmeat and mushrooms beginning to cook in the kitchen. But I can tell she's worrying about something, so I ask.

"It's my mother," she says. "She was visiting and flew back home today. I just feel like calling her to make sure her plane got there safely."

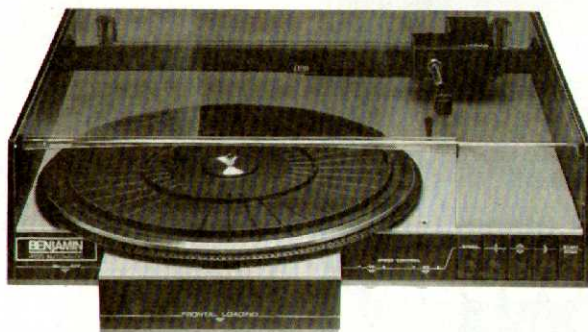
Oh no, I think; she wants to talk to her mother. I know what that might do to my evening, so I suggest the computer in the den. At the computer terminal, we connect with airline information and check the flights arriving in her mother's hometown. The flight was on time. Nothing to worry about. Susan sighs aloud and I silently. A bell rings from the kitchen. Dinner is ready.

It was a splendid meal, Susan says, as we relax afterward. As we lie on the rug, I turn on a film and dim the lights with two vocal commands. Susan doesn't like the movie, though, so I shut it off.

"What else can you show?" she asks. "How about etchings?" I say. Susan laughs in spite of herself. "I'm serious," I say. "I'm talking about computer etchings. I did them myself."

On the large screen appears a computer portrait that looks exactly like Billy Carter at his worst. Then one of Jimmy at his smiling best. Susan loves them! I quit worrying that she'll want to go home. After about 20 or so examples of my work, she asks if she can try it. I give her the light

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pen, switch on the "Artist" program and watch her reworking a photograph of Einstein from a magazine on my coffee table. She's so engrossed she doesn't know I'm in the same room, so I figure this is a good time to check in with my students. Oh, I didn't tell you. I teach a science course at night to a class of 35 at the local university—only I don't have to show up! I send my lecture notes over the computer to a large screen in the classroom and sometimes add in a test. The test results are keyed back to my computer from each student's terminal, and then the computer grades the papers. (And to think they pay me so much!) I enter the next evening's lecture from the kitchen keyboard and head back to the den, where I can hear Susan laughing over her heretofore undiscovered talents.

Suddenly, the house goes dark and there is no sound except Susan's voice.

"What's going on?" she asks.

"I don't know," I say, checking the terminal keyboard, but it's dead. I examine

*Can you afford to buy
your own computer?
The big question is:
Can you afford not to?*

the fuse boxes, but nothing seems wrong. I begin to sweat. I've never had this happen before. By the time I get back to the den, Susan has switched on a portable radio, and a public announcement informs us of a blackout affecting my half of the city. It will be hours before it comes back on. Susan asks that I take her home.

"I can't," I reply truthfully.

"What do you mean!?" she demands.

"Well, just look at the front door. It has no visible lock, no knob, no anything. It can't be opened without the computer and the computer won't work until the power comes back on," I explain. "Now, if there were a fire, I'd take measures."

"I guess I'm staying here, then." She smiles.

And I smile as I remember the words of my neighbor: "You're gonna suffer someday when that thing breaks down."

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A futuristic scenario? Not really. All the technology needed to put together a system to run this house is available right now. A small percentage is still in the experimental stage, but most of the hardware is already on the market.

And the market keeps growing. Radio Shack, the current home-computer sales leader, has already sold over 200,000 units of its TRS-80 Model I system (recently replaced by the TRS-80 Model 3). The prices range from \$399 for a basic game-playing machine to \$8666 for a deluxe business system. And there are many systems and price points along the way.

The second largest selling personal

computer in the U.S. is Commodore's PET (Personal Electronic Transactor), with home-computer units priced between \$995 and \$1295.

Then there's the Apple 2 Plus Personal Computer. Its base price is \$1530, plus it offers as options hand controls for games and the capability to both generate melodies and recognize verbal commands.

Do you need an engineering degree to use one of these little wizards? No, but a little knowledge helps. Introductory computer courses are offered at many adult education centers. And there's a glut of teach-yourself books on the market.

You also might want to lease a computer for a while before you decide to take the plunge and buy one. Radio Shack, for instance, will let you do that for about \$50 a month.

But it's not just the technically oriented stores that are selling computers now. You can find decent ones in department stores and even hobby shops. Or you can shop through the mail—something you really shouldn't do unless you've done your homework first. While lots of mail-order companies offer bargain prices, many kiss you goodbye after the initial sale. You're on your own for service—not a good idea.

To really know what you're buying, you can investigate options such as a floppy disc; it's like a magnetic 45 rpm record, and it allows you to store and retrieve information at high speeds. Usually, at least two discs work in concert. Let's say disc A contains a list of your friends and their birthdays and anniversaries. Disc B would then contain a program that would search that list and print the appropriate messages for any given date. Let's punch up October 29. Ah yes, Mom's birthday.

However, you *can* manage to make it through life without really understanding floppy discs. The electronics revolution has made it possible to compress millions of transistors into something that looks like a portable typewriter. When you wire this machine to a basic television, it all comes to life. The computer can do everything from play games to run your entire house.

Once you have a computer, there are three basic ways to program it. You can hire an expert programmer for somewhere between \$50 and \$100 an hour. Unless you're planning to take over the world, you might want to hold off on that option. You could, through books, lectures and basic courses, learn to do your own programming. It takes some perseverance, but once you get it down, it's fun. Or you can buy from such places as Radio Shack any number of prepared programs—for example, a Personal Address and Information system for \$25 or a Stock and Options Analysis system for \$100.

The big question, you might be thinking now, is: Can you afford to do all this? Given the increasing pace of most of our lives, the even bigger question will soon be: Can you afford not to?

