

Ramblings Con't...



Chuck Peddle, designer of the Commodore PET.

Home Computers: The Name of the Game is Peripherals

An Interview with Chuck Peddle, designer of the Commodore PET

Ahl: There is a rumor that all of PET's being made are going overseas.

Peddle: During the first half of June 1978, we shipped exclusively overseas but that was planned because of the holidays in Europe. Europe tends to

almost shut down business in July and August. So the intent was to load them up before that. We'll catch up with the U.S. dealers in July and August. Then we can start adding new ones. Admittedly, we haven't kept all of our U.S. dealers as happy as we would have liked but we've done what we can.

Ahl: What do you think of the Exidy Sorcerer?

Peddle: I think it's a legitimate attempt to keep the S100 bus alive. That seems to be the only major difference between it and two or three others. Actually, I think that they're a little late for the hobbyist market. But if you look at their backers, I understand where they're coming from and to them it makes sense. I've talked to several dealers and they're going to carry it because of the Z80, and they're trying to get the Z80 freaks. So maybe that's it.

Ahl: In the mass market, who's going to differentiate between the Z80 and 6502? It seems to me that software is the crucial element now.

Peddle: No. I don't think so. I feel that the next round of competition is the area of peripherals. I think we and Apple, particularly, and Ohio Scientific, are out there fighting peripherals in this show (CES). None of us are introducing new computers, we're introducing new peripherals. That's where the battle is. Maybe software too. But I think the software is going to be generally available to everybody. So I think what you do in peripherals is the major factor.

"The Home Computer Market: It's Not Here Now"

An Interview with Arnold Greenberg, President, Coleco, Hartford, Conn.

Greenberg: The home computer market in part has been a creature of the trade press which got a whiff of advanced technology and by building it up and building it up led the world to believe that the market is here now. It's not here now. It will be here soon. Right now the only market out there is a hobbyist's market. The marketing challenges haven't been solved. The technology is well ahead of the market. And until we can make compatible both the marketing with the technology, we're not going to have something at a popular price that's going to do something for the consumer. \$500 or more home computers are not the answer to anybody's mass market.

Ahl: So you think Fairchild and Atari may be taking or getting into things a little bit ahead of time?

Greenberg: They're not into it. Atari has said that they are not interested in a home-computer market at that price point. They're not into it nor is really Fairchild.

Ahl: In other words, those are just games.

Greenberg: That's right. And what we want is something more than a game. It's got to do more than entertain. It's got to educate as well and be functionally significant to the owner. But we don't want a sophisticated hobbyist item or a small-business computer. That's a wholly different market.

Ahl: So APF is probably out on a bit of a limb now with their little entry here.

Greenberg: Well, it's a very lovely item. I think their market is a small-business market. And I think they're looking at that very directly. They're in the small-business equipment field, they do a very good job in calculators. But that's not a mass-market item.

Ahl: Right. Where do you see yourself going in the video-game market?

Greenberg: We see ourselves expanding; we think we'll continue to be the number company with primary emphasis on the low end. Absolutely, that's where the mass market is. The low end. Remember, we are mass marketers. We entered this industry not from an electronics distribution base but from the traditional toy and game industry. We're interested in selling hundreds of thousands of units of an item. We're not interested in a limited distribution or 20 to 25,000 unit runs of anything. It's a very big difference.

Reliability and Mass Production

A word to the wise: don't expect that new \$700 computer to be as reliable as a \$700 Sony or Technics hi-fi receiver. Assembly lines for computers are new. DEC and DG come as close as anyone to having mass assembly lines for their minis; in both cases their computers spend more time in checkout, burn-in and quality control than the rest of the line together. Some of the new manufacturers haven't faced up to this yet. Furthermore, engineering changes are being made daily which further complicate any kind of mass production.

Case in point. Commodore has used four different cassette mechanisms in the PET in the first nine months of production. Each of them required changes in the mother board. Consider the problems then if you have a problem with the cassette recorder in your PET, as we did. The local service center puts in a new mechanism but finds it incompatible with the mother board. What then? Modify the mother board? Try to find an older

mechanism? (As of this writing, our PET has made numerous trips to the Norristown, Pa. regional service center and may or may not be cured.) A conversation with one of the largest PET distributors reveals that 30% come through with the tape head misaligned. No problem if you're only reading and writing your own tapes, but what happens when you buy a commercial tape?

I do not mean to single out PET; I have no information to indicate that they are necessarily any better or worse than anyone else.

In general, the most frequent problems I've heard about over all manufacturers fall in two major areas: (1) cassette recorder, mostly head misalignment and (2) over-heating errors that occur after the computer has been on for some period of time.

Does all this mean that you shouldn't buy a computer yet? Not at all — just be sure about the guarantee and service arrangements. Hopefully you won't need either but ...

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external cassette drive capable of storing 170 kilobytes. Price \$100.

Intelligent Systems Corp. again had everyone drooling over the spectacular color graphics on their Compucolor line but delivery is still the big question as it has been since first showing the products in March at the West Coast Computer Faire.

Bally, of course, showed the professional Arcade which is reviewed elsewhere in this issue.

A high-end new entry is the **Smarts II** from **Fire Bird Sales Company**, P.O. Box 116, Woodland, Illinois, 60974. It has 32K of RAM built into it with an expansion capability to 630K of RAM. It also has a mini floppy disc drive built into it which can be increased to 3 drives as the need dictates. It provides output on a CRT display which is not included with the basic unit, 16 lines of 64 characters each. It also has provision for controlling color. The CPU in the Smarts II is a Z-80, actually a Mostek 3880, but nobody's ever going to know. The price on the Smarts II is \$1,695.

"The Home Computer: A Tool Not A Toy"

An Interview with Mike Scott, President, Apple Computer Inc., Cupertino, CA.

Ahl: I've heard it said that over the next two years the distribution channels will be the name of the game. Anyone can build the hardware — the Japanese, Koreans, Hong Kong people and so on. But sales support and software support is a more difficult game. How are you looking at this at Apple?

Scott: We have two-step distribution, meaning a regional distributor that supports a regional area of stores, say like 60 stores. He's able at least once a month to visit all the local stores, able to communicate to them the latest new product available, how to sell it, and service it.

Ahl: And service takes place at the regional level?

Scott: Yes. But the service is also explaining to the guy how to sell the product. Everybody's got a pitch on why a computer is good. But when a customer comes in the door, how do you effectively minimize your sales time? You want to be able to close that sale without having the salesman spend eight hours and then maybe lose the sale. So, we're spending a lot of effort on the advertising to get the people into the regional stores or in the local stores to get that local support. Let's say a year or two out when there's 100,000 or 200,000 users and they have

Technology: VLSI Around the Corner

Those ingenious engineers who gave us integrated circuits, then followed that bit of magic with large-scale integrated circuits, are about to pull another rabbit out of their hats. The latest wizardry is something called very large-scale integration (VLSI), and application of VLSIs to consumer electronics could make even the most sophisticated products now coming along look like Tinker Toys.

Among the possibilities? How about a pocket calculator-device with an alpha keyboard and a full foreign-language dictionary in its memory. Or home computers with vastly expanded capabilities over those currently on the market. Or even a small voice-recognition device which links directly to a computer.

Just what is VLSI? The original integrated circuits (ICS) put 15 to 20 transistors on a chip; large scale integration (LSI) jammed 500 tran-

sistors on a chip. Now comes VLSI with the promise of more than 5,000 transistors on a chip. The first VLSI chips will go to the big computer companies but it won't be long (2 years?) before they'll be available in consumer products.

The one possible drawback is that these circuits apparently can't be made with good old standby silicon, but must use gallium arsenide. This isn't a strange, new material; the industry has been using it for high-speed and high-frequency semiconductors for years. Now they're going to use it for VLSI. But unlike silicon, gallium arsenide can't be made to support higher operating temperatures. This means that no power output circuits can be made as part of a VLSI chip, and in fact if there's much heat involved—such as in the power output of an audio amplifier or of a CB transmitter—the output transistors not only have to be separate, discrete devices, they must have good heat isolation from VLSI circuits.

a technical question, they can't call the factory. We just can't have enough phones. So they have to be able to go back to their retail store where they bought it to get the service.

Another thing — I think both PET, Radio Shack and ourselves are following a premise that once a guy buys the initial computer, over the next year or two he'll come back and spend at least an equal amount buying accessories and peripherals. So there is an after-market automatically built in. And again, you need a local store rather than mail order where the customer can go select his add ons.

Ahl: Are you looking at stores like the discounters and the mass-market merchandisers?

Scott: We do not do any business through catalog or discount mass-merchandising chains. We want to be

able to have a higher margin and the sales support that you can get from a one-on-one sales relationship that is necessary to sell at \$1,000 computer.

Ahl: You're not interested in, let's say, a Macy's or a Bloomingdales.

Scott: We're going to do test markets over the next six months to understand what kind of point-of-purchase sales aids you need to be able to sell in those stores. We started last September with Team Electronics, which is an example of a hi-fi chain, to start understanding how to sell through those stores.

I think another change is going to take place. Right now 80% or more of the people that are buying home computers already know something about programming and do programming themselves. Two or three years from now that percentage is going to reverse; 80% are going to want pre-canned programs. That's because they're lazy. They want to turn on and have it come back and say, like the H&R Block guy does, "Answer these questions and I'll tell you what your taxes are." So it's not really user-programmed in that sense. The factory has a software base on it. But it still is adaptable at the home level and once you get into it, you could modify the programs a little bit.

Another important thing is to get enough people thinking that it's not just a toy. This is where the games started them thinking. And Apple helps encourage it a little bit. You start with it because it's a toy. But we've got to start getting people thinking of it as a tool.



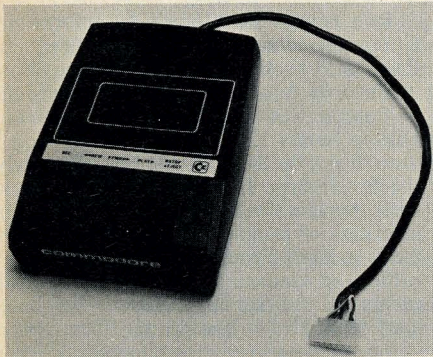
Mike Scott of Apple Computer

swing. The OE 1000 outputs composite video for use with a modified TV or video monitor. The screen format is 16 lines by 64 characters. It has an upper and lower case mode or TTY mode keyboard and will display 96 ASCII characters and 32 special characters. The OE 1000 has full cursor control, automatic scroll, erase to end of line, erase to end of screen, and clear screen. \$275 kit, \$350 assembled.

Otto Electronics, P.O. Box 3066, Princeton, NJ. 08540. (609) 448-9165.

CIRCLE 213 ON READER SERVICE CARD

PERIPHERALS



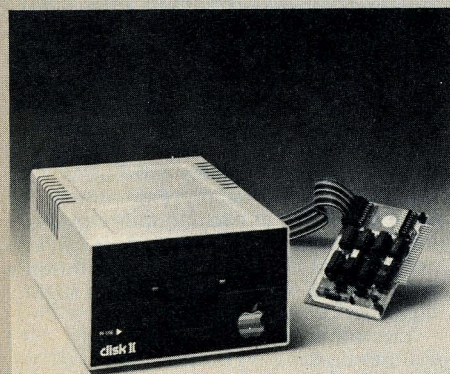
PET PERIPHERALS

Commodore has two new peripherals for the PET personal computer. The first is the external cassette drive for expanded file keeping. It connects to the special IO Port and is available now at under \$100 directly from Commodore or from PET authorized dealers. The cassette drive is capable of read/write up to 170 kilobytes. It is accessed directly from the PET through the basic command.

The second peripheral, the printer, features up to 80 characters per line on a 8½ inch wide roll or fanfolded paper. It prints at 120 cps. All Commodore upper and lower case and graphic characters can be reproduced on the printer on a 7 x 8 dot matrix. In addition, the PET can be programmed to develop a special, unique graphic character, such as a company logo, which can then be reproduced any number of times.

Commodore Business Machines, Inc., 901 California Ave., Palo Alto, CA 94304. (415) 326-4000.

CIRCLE 214 ON READER SERVICE CARD



APPLE DISK

Apple Computer, Inc. has announced Disk II, the newest intelligent peripheral for its Apple II personal computer. The new device is "the easiest to use, lowest priced, and the fastest minifloppy disk drive yet offered by any personal computer manufacturer." Disk II provides rapid access to programs and data which makes home applications like address files, social appointment calendars, and recipe files faster and more useful. Disk II's advanced Disk Operating System (DOS) software, provides dynamic disk space allocation, so a system user need not be concerned with the size or physical location of a file on the disk. The DOS performs this housekeeping function; the user simply indicates the name of the file being stored or retrieved.

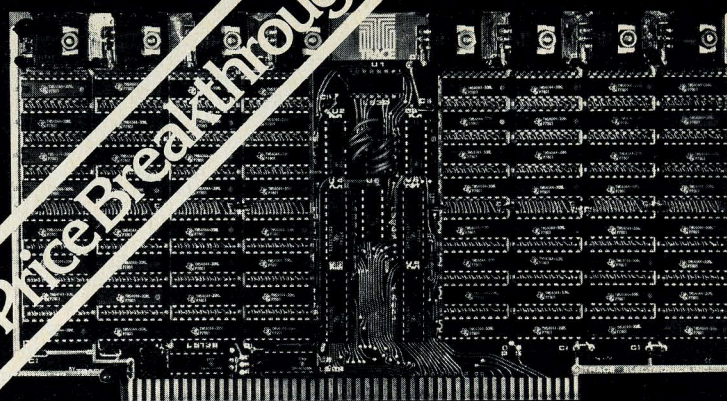
True random or sequential data access can be enjoyed without regard to the physical location of data on the disk. Moreover the DOS provides compatibility with existing languages through the use of standard BASIC commands.

The Disk II subsystem consists of an intelligent interface card and either one or two mini-floppy drives. The computer will handle up to seven controller cards and fourteen drives for instant access to more than 1.6 million bytes of data. The combination of a bootstrap loader in ROM (read only memory) and an operating system in RAM provides powerful disk-handling capability. \$495, including controller card and Disk II drive.

Apple Computer Inc., 10260 Bandleway Dr., Cupertino, CA 95014. (408) 996-1010.

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14. Power required is 1.7A at 8V for model 1600 and 3.3A at 8V for model 3200.

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