

PERSONAL

COMPUTER

EVERY THURSDAY

50p

NOV 24-30 1983 Vol 1 No 38

NEWS

THE COMPLETE COMPUTING WEEKLY

THIS WEEK

DRAGON SCRAMBLE
Arcade action in an
all m/c listing

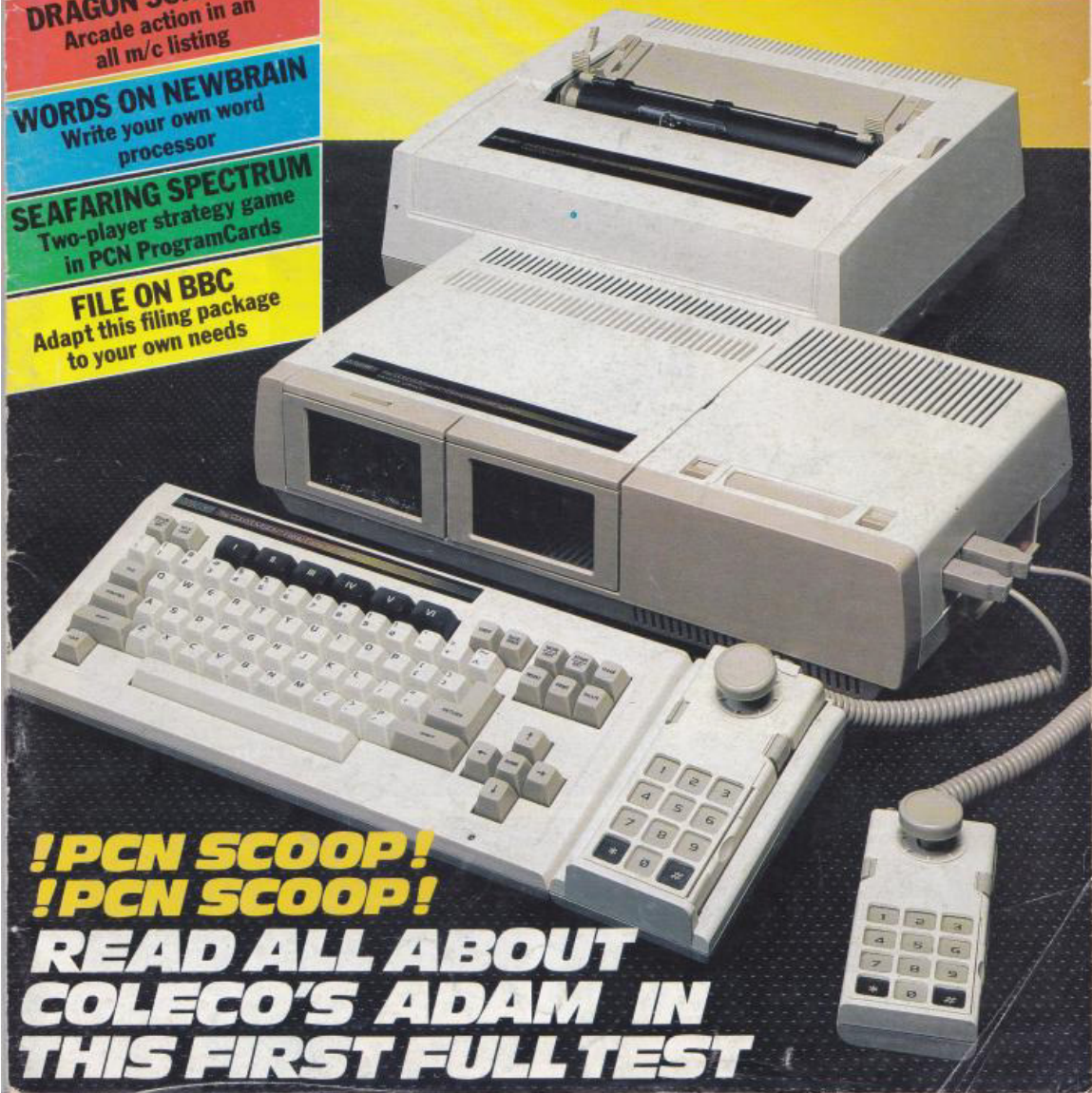
WORDS ON NEWBRAIN
Write your own word
processor

SEAFARING SPECTRUM
Two-player strategy game
in PCN ProgramCards

FILE ON BBC
Adapt this filing package
to your own needs

PULL-OUT MICROPAEDIA

Your complete guide to monitors



**!PCN SCOOP!
!PCN SCOOP!
READ ALL ABOUT
COLECO'S ADAM IN
THIS FIRST FULL TEST**

Will the Adam initiate a price revolution? Brian Power investigates Coleco's industry-shaker.

The Eve of Adam

A lot of computer makers talk about giving you more for you money. Every month there is yet another system hustled onto the market with promises of a larger memory and more power—all for a smaller investment.

Coleco is basing its much-publicised new Adam on that premise. This computer is offered at such a radically lower price that the industry is watching to see if Adam can live up to its advance billing.

What makes this computer so different is that the entire system, including a letter-quality printer, will sell for just \$700 in the US. (U.K. price is expected to be about £700). You would expect that kind of a

price breakthrough from one of the larger American companies such as Apple or IBM. But Coleco? Isn't it best known for its toys and games?

The company isn't talking much about how it managed such a coup. But the vertically-integrated company was able to develop its own printer and tape drive and other new technology such as simpler motors. You end up with 80K of internal memory, a full keyboard, a good mass-storage tape system, built-in word processing and a letter-quality printer in the basic system. Here's how the Adam is put together.

Presentation

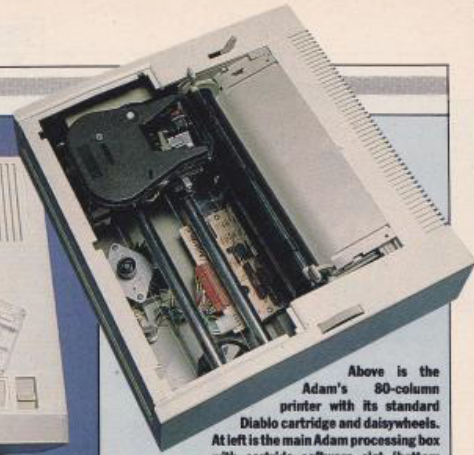
Coleco obviously knew that Adam will go into the homes of a lot of first-time computer buyers, and the machine had to inspire confidence just sitting in the box. It does. Blessed by the fact that the computer connects to the television set, Coleco can package the Adam without a monitor and make for a more compact unit.

The whole thing comes in one 40-pound box that one average adult could wrestle in and out of taxis and even through train stations, if it had to come to that. The Adam is smartly, and safely, packaged inside a bright box. I have seen them cause



Deborah MacNeill

**PCN PRO-TEST
HARDWARE**



Above is the Adam's 80-column printer with its standard Diablo cartridge and daisywheels. At left is the main Adam processing box with cartridge software slot (bottom right), floppy cassette tape drive (bottom left) and plug-ins for further expansion (they are the slots pictured above the tape drive).

a real stir among air travellers as they spun round the baggage sections at a major airport.

Documentation

The Adam comes with three books, a 64-page set-up manual and two larger binders for word processing and programming in BASIC. You can see the way Coleco rushed the Adam onto the market by the fact that pages in the word processing book have newly-written instructions glued over the old ones.

It is obvious that Coleco expects some Adam buyers will never get beyond the set-up manual. That manual contains enough information for simple word processing so that you don't really need the more extensive binder. It also tells readers that programming is a hobby like sewing or carpentry, and they don't have to bother learning it if they don't want to.

This set-up manual is a welcome change to many instruction books — it is actually easy to follow. A no-nonsense book that doesn't pander to the novice, it contains simple instructions and plenty of clear

photos that take you from unpacking the box to changing the printer ribbon. The on-screen help menus are extensive enough to get you going without the manual once Adam is taken out of the box and plugged in.

Construction

We now move into the heart of the matter. Coleco has created Adam from three main components, the memory console, the keyboard and the printer. The console includes the system's Z80A microprocessor, meaning compatibility with the CP/M operating system, the RAM and a high-speed tape drive.

The microprocessor addresses 64K of RAM but the computer also contains a separate processor for the video display that includes an additional 16K of memory just for graphics, bringing the total to 80K. Another 64K of RAM is available as an option, bringing the total up to 144K.

The sculptured keyboard has 75 keys, including six programmable function 'smart keys' that correspond with six labelled boxes on the screen. The

keyboard has the feel of more expensive systems and I give it a good rating.

Coleco was thinking of word processing when it designed the keyboard, including keys such as *insert*, *delete*, *move/copy* and *store/get* to provide quick access to specific word processing functions. In addition to ten command keys, there are cursor arrow keys.

Two game controllers come with it. While they are primarily for playing games, one of them can be attached to the keyboard to move the cursor, as an alternative to the arrow keys, and can also be used for entering numbers.

The keyboard and printer have separate microprocessors, and a communications system Coleco calls Adamnet ties the whole thing together. It is enough to allow the computer to do simple multi-tasking.

Screen

The screen for the Adam is likely to be your own television set. It had better be colour or you will miss a lot of what Adam offers. During some operations the screen contains four different sections, with four different colours.

The screen is set up to convince you that working on Adam is no different than typing on a typewriter. I wish computer makers wouldn't bother because the screen is going to start looking tedious once you get used to the system.

There are graduated markers up the left side and across the top of the screen, to set the margins for a printout. There is a band of six blue boxes across the bottom of the screen that correspond to the 'smart keys.' Above that is a roller, shaped like a typewriter roller, which you write into. After writing two lines, the lines begin rolling up the screen.

If it sounds cluttered, it is. There isn't much room on the screen for your work by this point. Coleco is assuming you are incapable of thinking for yourself and need to be shown everything.

Storage

A lot of people prefer the faster and more reliable disk drives to tape cassette storage. But Coleco has got around that, and



The Coleco games machine — released in the UK this past summer (and Pre-Tested in Issue 2) — will be able to take an optional upgrade that turns it into the Adam. The Adam, in fact, is built around the games machine's main board. In the picture opposite, you'll see that board — with the Z80 processor nearest to the front of the machine and the cartridge software socket just behind it.

The games machine Adam adaptor will be available in this country before the actual complete Adam system itself — but no-one should be fooled into thinking there is any difference whatsoever between the adapted games machine and a completed Adam. They are the same machine.

The games machine adaptor is expected to sell for about £450 when it reaches this country — but the price is likely to fall on the higher side to ensure that an adapted games machine will be more expensive than it would be to buy a complete Adam system.

PCN PRO-TEST HARDWARE

lowered the cost of Adam, by developing a high speed tape system with a transfer rate to the microprocessor of 19.2K bits per second — eight to 16 times faster than other cassette systems. While it was still slower than a floppy disk, I found it worked quickly and transferred the information without any problems.

The closed-loop bidirectional tape is preformatted to hold 500K of information (about 250 pages of text). Information is stored sequentially on the tape, with the initial information stored in the middle of the tape and later files added on either side.

Printer

So far I have been fairly positive in detailing Adam, but when it comes to the printer I begin to worry. By advertising Adam as a complete system, it could live or die if the printer doesn't hold up.

To be positive, a lot of letter-quality printers alone cost as much as Adam. Coleco has developed an 80-column bidirectional printer with a 91/2-inch carriage that uses standard Diablo daisy wheels, allowing you to choose your type face, as well as standard ribbon cartridges.

For the price, I suppose I could live with the 120 words per minute speed, although it seems painfully slow.

But here's the rub. Most of the printer is made of a hardened plastic and doesn't look all that sturdy. I have doubts that it could run well for any length of time. It looks like a small child could do a lot of damage quickly. Coleco swears it has tested the printer extensively, but I couldn't help wondering how well the printer could stand up to six months or a year of printing.

Expansion

The entire Adam can be an expansion module, so to speak. You can buy a stripped-down version of the Adam which allows you to fit your ColecoVision video game system into the memory console.

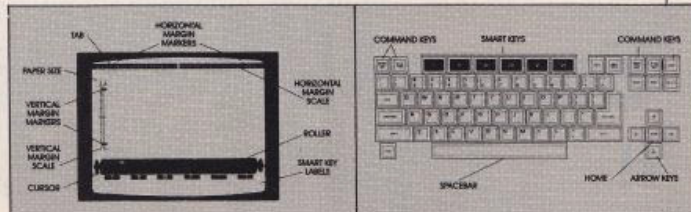
Coleco plans to introduce an expansion module early next year, which will contain a floppy disk drive and an 80-column card for those who are going to do more serious work. It will sell for \$300 in the US.

Adam has four expansion slots, three for peripheral cards and one for the upcoming expansion module. The slots can be used for such options as the 80-column card, Coleco's steering wheel for its turbo game or an adapter for Atari 2600 game cartridges.

At this point, none of these are available. Last summer they expected the expansion module ready by the end of the year, but that has obviously proved too optimistic.

Software

In most systems the word processing package comes on a separate cartridge or disk, but on Adam the Smartwriter word processing program is built right into its ROM. Turn on the computer and it is automatically in a typewriter mode, where every letter you strike on the keyboard is typed onto the printer.



The Adam's keyboard and screen layout are shown in the above diagrams from the Adam Smartwriter Easy Reference Guide. The Adam's built-in Smartwriter word-processor can operate in two modes — as a straight electronic typewriter using the daisywheel printer and as a full scroll-across 80-column word-processor.

The diagram at left shows what the screen looks like when you're word-processing, while the keyboard layout sketch shows the position of the Adam's function keys above the main board. The function keys handle things such as search and replace/margins/tabs, line spacings and storage.

A keystroke switches to the word processing program, which offers on-screen correction, deletion and text-searching. It highlights the text to be moved or deleted. It has an *undo* key to retrieve material if you change your mind or have made a mistake.

Adam has only 36 columns, which is hardly adequate if you are going to write often. Adam has several ways around this. There is a scrolling function that lets you move a window back and forth. A modelling function simulates the 80-column format by showing only the characters near the margins. In a word, they seem clumsy and an inadequate replacement for a wider character display.

The computer comes with two data pack tapes, the Smartbasic language and the Buck Rogers — The Planet of Zoom game, a product much more sophisticated than the game currently available on ROM cartridges.

Smartbasic's source code is compatible with most Applesoft Basic statements. While most programs written in Applesoft Basic will run on Adam, there are differences in the use of PEEK, POKE and CALL commands.

Coleco is currently working with software companies to convert some CP/M programs to the Adam tape system. It remains to be seen just how many software developers will convert their systems, although a disk drive module would probably increase the number.

Coleco isn't waiting. It is developing a Smartfiler database management program, to be released early next year, to

manage spreadsheet analysis, telephone directories and personal planning diaries.

Verdict

Coleco has set a rock-bottom price for the Adam system, but this puts the whole system out on a limb if one section such as the printer doesn't work.

I think Coleco is going to have to prove that its printer is really sturdier than it looks. I would like to see it used for six months before I am convinced it can stay the distance.

Also, why put all this emphasis on word processing and then make a system with 36 character lines. It doesn't make sense. The moving window that lets you scroll across the width of the line doesn't impress me as any kind of practical alternative. I think a lot of people who plan to write more than two letters a week to Aunt Millie are going to want the 80-character upgrade — and will have to pay more for it.

Yet in the end, providing the printer holds up and you can use 80-character lines, I think the Adam is a welcome addition. At the very least, if it sells heavily it is going to force the price of other computers down.

PRICES

Main unit including cassette drive, printer and computer unit	\$700 US
Anticipated price for floppy disk and 80-column card	\$300 US
Anticipated price for Adam conversion unit for Coleco games machine	\$500 US

SPECIFICATION

Price	\$700 US
Processor	Z80
RAM	80K
ROM	32K
Text screen	36 x 24
Graphics	Screen same as Coleco's high-resolution games machine
Storage	Cassette tape digital data pack — 500K formatted storage per tape — (included with machine) and optional disk drives available in future
Interfaces	Daisywheel printer included with machine using non-standard (for disks drives, 80-column cards and others)
OS/Language	Coleco's SmartBasic
Distributor	CBS/Ideal Toys, Hedley Road, East Woodley, Berkshire, 0734 698188