

MICROFILE

We've seen hide nor hair of Henry Budgett, since he took delivery of two new machines. He's finally returned to the land of the living with his reports on the new HP85 and Microtan systems and more besides.

Two months may only be eight weeks to you but to someone in here it has been a very packed time. Certainly in terms of the home and personal computer market it has been a very fast moving time indeed. Owing to a wide variety of reasons last month's offering never reached your waiting eyes so some of the news may be a little less than fresh - it is slightly less than boring, though.

This is really a preview offering. I shall be dealing with at least two of these machines again, probably devoting a whole month to each. The first two are now well known, but I have been fortunate enough to have one of a very limited quantity of the top system for review and.....

The Dream Machine

The reason most people give when asked why they chose a PET is that it is a complete unit; VDU, keyboard and mass storage all in one small unit. Whilst this new system from Hewlett Packard has all the previously mentioned parts and a thermal printer as well it resembles a PET in about the same way as a racing car resembles an MG; they are of the same genus but the HP is so far advanced that it outstrips almost anything in the personal computer market. This is a *personal computer* and not a home machine. Why the difference? Well, with some few notable exceptions, the home computers

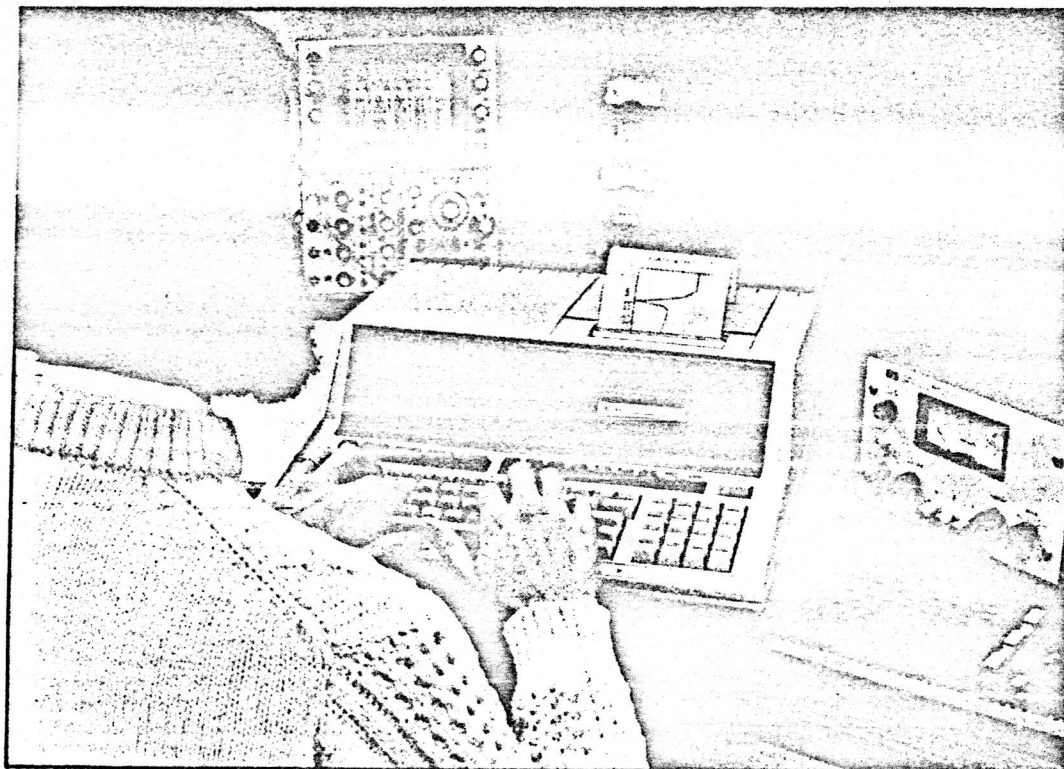
currently available are overgrown programmable video games, not that that in any way detracts from their worth. This has been designed for research laboratories, education and other serious users who will be able to benefit from the superb range of facilities that are offered.

Basically, the HP85, for that is its name, consists of a single box, slightly larger than an Apple, with a 5" VDU, tape cartridge, thermal printer/plotter and full ASCII, numeric and function keyboards. Inside is a complete custom designed system. For example, the CPU card consists of the custom built CPU, four ROMs holding 32K of BASIC/operating system, eight RAMs (16 K of dynamic) controlled by yet another custom built chip, the keyboard controller (again custom) and finally the bus driver chip which is, quite naturally, custom built. Grand total is sixteen chips! The VDU has a totally independent memory of four screens-full that can be scrolled or copied direct to the printer at *any time* or under program control.

The graphics capability is excellent with an available by points. Program access is simple, you can manipulate scales and put labels on graphs and diagrams. To make life a little easier for the user the built in plotter turns diagrams on their edge for printing, this allows continuous strip charts to be produced.

Finally on the hardware side we have the tape system. This is mechanically the same as that used on the HP minis but unfortunately the format has been slightly changed. The method used is

Hewlett Packard's new HP85 (right) is a powerful machine in a compact package and at a reasonable price. The Atari 800 (far right), one of two new Video Computer Systems on their way.



similar in many ways to a soft sectored floppy disc; you have a directory which is searched for your required program, this is then located and loaded. The speed of this operation is considerably faster than that of the conventional cassette.

Super Software

The HP has tucked away inside its diminutive frame the best version of BASIC that I have come across on a micro. It meets, and often exceeds, all the latest ANSI standards for this, much abused, language. I strongly suspect that anyone who had been brought up solely on a Microsoft type implementation would get severe brain damage! In fact this BASIC has everything you could wish for, and it's logical too. For example, you get renumbering, full error checking programmable user keys, full debugging, single stepping, optional screen (DISP) or printer (PRINT) displays, or both... the list goes on and on.

One of the most common complaints about home produced software is that it isn't 'bombproof'. Well I've written more than a few on the HP and you can protect them very easily, even to the point of securing your files on the tape so that no-one can list or edit them.

A possible moot point is that, to quote any of my rivals in the game, 'HP do not even say what processor the 85 uses'. As you may have guessed I'm talking about machine code, and as mentioned earlier the HP has a custom chip. Not only did someone not read their press release carefully they also didn't listen when it was stated that an assembler will be available soon! Anyway you don't really need machine code as in the main this machine will be used as an instrumentation controller, or as a system to analyse results produced by other systems.

In Brief

There you have it, unfortunately in brief form because of a lack of white space to fill, but the HP 85 has arrived, bringing with it a whole new generation of professional computers that are cheap enough to be dished out to each member of a research team. I said 'cheap enough', it does cost £2000 but this price is artificially high -

they can't make enough to go round - and it is quite possible that it will fall to around £1200. If that happens it could well clean up the micro market overnight. After all, people are generally prepared to pay for quality! (My thanks are due to the team at HP who let me keep the system until they lost all hope of ever seeing it again!)

Video Strikes Back

Ingersoll, the watch people who expanded into electronics recently, are to distribute the Atari 400 and 800 Video Computer Systems in this country. Information is scarce at the moment, but it appears that the top model, the 800, will be equipped with 8K RAM - expandable to 48K - and 8K ROM - expandable to 40K. CPU is the trusty old 6502 and the system will handle four floppies and has a full feature ASCII keyboard with programming being done in Atari Basic. Prices will range from £400 to £750 approximately and features such as full colour and sound are standard. For more details watch this space.

The Odd One

Whilst making one of my occasional tours around London's Computer shops I came across a familiar sight. There, sitting on a service bench, was what appeared to be a 32K, large keyboard PET. However, on closer peeking it turned out to be something rather different. It had a full terminal style keyboard. Some of the keys had been moved to more sensible places (such as the cursor controls) and there were no graphics legends on the keys. What was it? Simple really, it's the PET Business Machine. Owing to the fact that some of the RAM had expired I couldn't see it going but apparently the lower case, that you normally have to POKE out, is available and you have to POKE the graphics if you want them. A very sensible idea really, but this machine had an American transformer so I decided to track down some details. Commodore say that they are not yet available in this country but they are planned to arrive in the near future, a few months but that's their estimate.

If you are planning to set up a business system with a PET in the driving seat I reckon this would be much better and easier to use than having graphics floating about. If anyone out there has one or knows more about it please drop me a line and give me your impressions.

Tone Deaf

Regular readers may remember that I wrote a piece on modems not so long ago. Well, Microfile bears fruit occasionally, we are going to publish a design in the march issue of Computing Today, but just for those of you who want to go your own way here is the standard frequency set for data transmissions.

ETI

US Standard

Mark	1270 Hz
Originate	
Space	1070 Hz
Mark	2225 Hz
Answer	
Space	2025 Hz

CCITT Standard

Mark	980 Hz
Chan. 1	
Space	1180 Hz
Mark	1650 Hz
Chan. 2	
Space	1850 Hz

CTs modem project is being produced in PCB form by ZOT Engineering Ltd of Bogpark Road, Musselburgh, Lothian. Naturally it uses the above frequencies and runs at 600 Baud.

