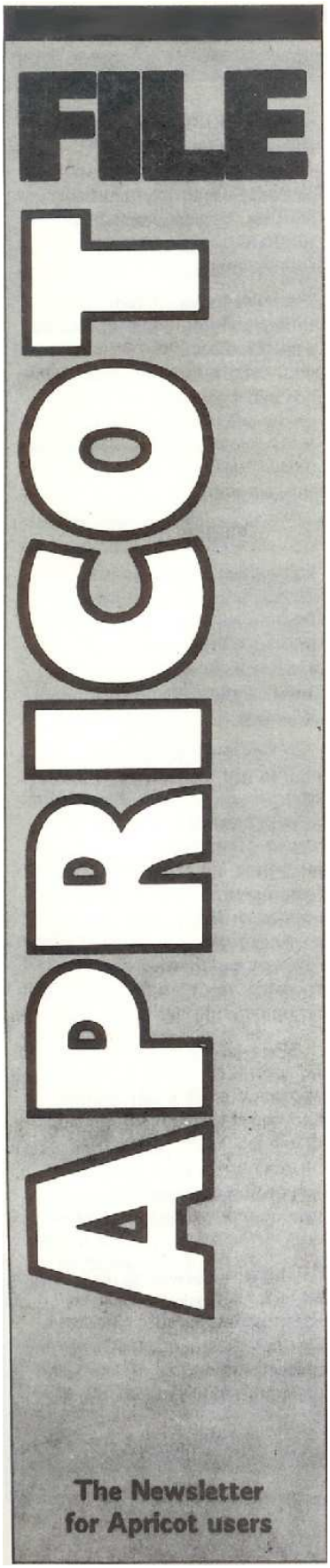
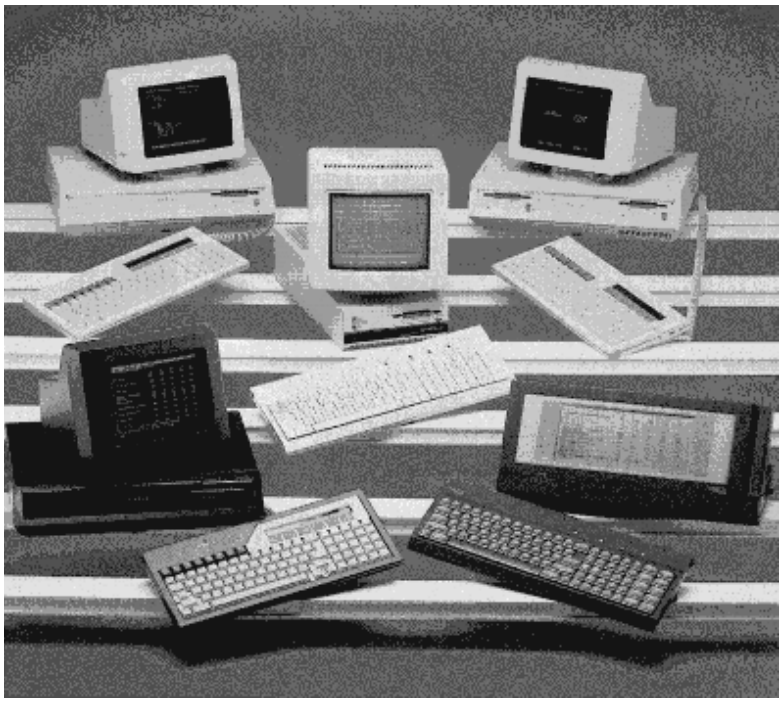


Apricot File 3.8



Scans courtesy of www.actapricot.org

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> **Dennis Jarrett of TP Group**
> **Stuart Bunt**
> **Eddie Bromhead**
> **Mark Whitehorn**

Many additional thanks to Eddie Bromhead for scanning all of Release 3, 4 and extra inserts.

Release 3.8

FILE

APRICOT

The Newsletter for Apricot users

May 1988

Apricot's progress

Annual results and acquisitions

Apricot shares didn't react particularly strongly when the company reported year-end results with turnover up **20 per cent** to **£85.1 million**; the City presumably wanted a sales growth more in line with Apricot's past record. But profits have recovered well following the write-offs and start-up costs, more than doubling to **£8.2 million**. The group will now be paying dividend again.

Some two-thirds of Apricot's revenues came from the reseller business, and that obviously will remain the group's major earner. But confirming its interest in direct-selling full-systems offerings, Apricot has just acquired a DEC-based insurance software specialist called **Adataco** for £2 million plus performance-related extras that could total another £1.5 million.

Adataco is a private company that deals in high-value packages and services which should mesh well with Apricot's current financial services operations — although the products are being ported over to Apricot's Sequent-based VX9000 supermicros, Apricot Financial Systems still sells primarily on DEC hardware.

Incidentally, Apricot Financial Systems has just signed what it claims is the first stage in a marketing strategy for targeting the Far East — **Toppan Moore**, a big dealer in Hong Kong, is taking Apricot's QUASAR financial software to sell on DEC VAXes. A representative in Tokyo is set to be the next step.

Apricot has also added another systems-oriented company, paying £3 million in shares for the USM-quoted graphics firm **Sigmex International**. Sigmex is carrying a loss that is attributed to the long lead times for product development and sale-closing in its market; Apricot says it can pay off Sigmex's £4 million debt from its own healthy cash reserves of some £11.5 million.

Apricot's reasons for this diversification are a bit less obvious, for Sigmex specialises in high-end graphic workstation applications (again based on DEC) for defence and scientific users — present Sigmex customers include NATO, Electricité de France, and the Dutch air force. Presumably Apricot expects to put Sigmex technology into its 386-based machines to pursue this kind of blue-chip business with its international prospects.

Top software sellers

Elsewhere on the corporate front, it looks as though Microsoft is currently top dog in the software business. According to the US industry newsletter *SoftLetter*, the list of top-selling independent software firms in the American microcomputer market for 1987 is headed by **Microsoft**; **Lotus** held the no.2 position followed by **Ashton-Tate**, and those three accounted for nearly half of all the sales from the top 100 vendors. Their total sales revenues were **$2.3 billion**, up dramatically from 1986's $1.5 billion. **WordPerfect** took the no.4 spot.

Fast movers include DTP-oriented firms **Software Publishing**, **Aldus** and **Adobe Systems**. Those going the other way include **Digital Research**, though it still rates 15th place. ◆

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User Experience

The Anatomical Computer

Apricots in the Anatomy Department

By Dr. Stuart Bunt

Many readers have requested more information on how Apricots are used in the real world, presumably users looking for new ways of using their machines or tips on how to use them more efficiently. This article describes perhaps one of the most unusual applications of Apricot computers.

The history

You might wonder at what Apricots have to do with such an esoteric pursuit as teaching prospective medical and dental students the anatomy of the human body. (I think my occupation, lecturer in Anatomy, could give the *What's My Line* panel quite a run for its money: I'm sure they would be foxed by the mime!)

In a recent survey of microcomputer usage in the University, our department came out with more micros than any other — including the Department of Microcomputing! (Mind you, the fact that we did the survey may have had something to do with that.) We have some 27 Apricot computers ranging from F1s, F2s and Portables, through PCs and Xis to Xens and a Xen-i.

How did we come to have such an esoteric collection of old Apricot memorabilia? It started when I came back from the USA in 1983. I left behind an Apple II, much used for adventure games inbetween data processing (on 100K disk drives!) and a Xerox 820, laughingly called a 'word processor'. This monster had 8in disks, stood almost three feet tall on the floor and had an LCD screen showing maybe four words at a time. Still, having tasted the ability to manipulate my tortured texts into some sort of readability, I could not think of going back to the old Sellotape-and-scissors method for my normal eight or so drafts per document ...

Thanks to a computerphilic chairman and swingeing cuts in secretarial help, the Anatomy Department in Dundee was already one of the first in the university to go over to word processors. The department used two Commodore Pets with WORDCRAFT and a Qume daisywheel printer. But I needed my own computer for word processing; Commodore seemed intent on committing Hari Kiri by refusing to bring out a 16-bit machine, and IBM was not yet exporting to the UK. The magical Apricot PC (with *256K* memory as standard — shock! Disbelief!) was rumoured to exist ... and it was made in Scotland, too.

Having decided on the machine, I had to find the money. Grants for computing were very hard to obtain from the research councils as, heaven forbid, you might use the computer for more than just the grant project. (Making efficient uses of resources? Tut tut — how subversive, more than my job's worth John, end of civilisation as we know it, etc etc.)

Funding

In the end I got a 5MB Xi for reconstructing the pathways of nerve fibres (my research is into spinal cord regeneration and repair). But nobody said I couldn't use it for other things when nobody was looking ...

It was clear that it could be used for word processing, data storage, and the like. But what about teaching? I was using the 2D CAD package DOODLE to reconstruct the fibre pathways from sections; but DOODLE also has a very good macro facility for setting up displays and short 'cartoons'. This led the way to producing some anatomical drawings to show the students complex three-dimensional relationships.

In 1985 the government announced the provision of money for a 'computers in teaching' initiative (CTISS) that was aimed at putting computers where computers had never gone before. We were well placed, and received £42,000 to employ a programmer and buy hardware to investigate the use of computers in the teaching of anatomy.

We decided to go for Apricot equipment because I already had the Xi and was well pleased with its price and portability. I used to keep a second monitor at home and just take the keyboard/box combo back and forth to work; the computer stood up to being slung in the back of the car several times a week.

Everyone we talked to expressed anxiety that Apricot would go bust: why buy an Apricot and be left unsupported? This ensured that sales were limited in the academic environment. It is strange how rapidly things can change — today no-one worries about being left high and dry by the fly-by-night operators out of Taiwan via Hemel Hempstead (yes, *you* know who you are).

Apricot however was offering a really good discount for academic users which brought the F1e down below £500. Remember this was at a time when the only opposition in the MS-DOS field was the likes of Olivetti offering the same performance

(256K RAM, 320KB drives) for about £2,000! The Amstrad was a curious eight-bit cassette-tape games-playing machine, and cheap IBM clones were unheard of.

Of course what we didn't realise was that if Apricot went bust — or, just as catastrophically, if it were to drop the Apricot standard — all development for Apricots would halt overnight (in spite of the 100,000-strong user base).

The network

No use crying over spilt milk: we went ahead with Apricot. We installed a Point 32 network based on a 20MB file server (an Xi without a keyboard for twice the price, though they never tell you that).

The department was wired over four floors with the Corvus OMNINET bus cable by an external contractor. The good thing about the Corvus system is the simplicity of its cabling — no fancy coaxial cable, no balancing of loops and stars of wire. The contractor was therefore able to provide better cable and far superior junction boxes for half the price of Apricot's offerings.

We attached the students' six F2s, my Xen (which had replaced the Xi), our programmer's Xen and the departmental secretaries' PC and Xi to the network. When Apricot dumped the F series (thereby confirming everyone's suspicions about Apricot's lack of stability, and losing the company further thousands of academic sales) we added cut-price F2s for each computerphilic member of staff and bought a couple of Portables from Dixons — it only took three returns before we got one that worked. To assess their use we also bought an F1e and an F1; these are now used primarily as terminals, talking to the campus' Prime mainframe via KERMIT.

The network has turned out to be reliable and fast, and it was comparatively cheap to install — £600 for the whole department. We set it up so that messages and papers could be sent around the department. In the event, however, we've found that it is just as quick to walk upstairs with a disk, particularly if you have to give the secretary some instructions. So in general the network is underused; we don't have any multi-user software and, although the idea was that there would be a main library of software on the central hard disk, most people have built up their own stocks on floppies.

Even the speed of the central hard disk has not been much of an attraction — it's faster to load SuperWriter from a floppy disk than to log on to the server and download it from the hard disk to your own machine. In the end we bought a keyboard for the Server (sold to us reluctantly for the extortionate price of £200) and now use it as a 20MB Xi.

The only drawback is that part of the graphics area is taken up by the network routines and so the user has to boot from a floppy disk if graphics are to be used. We could reformat the hard disk I suppose, but I am reluctant to do this as we still utilise it occasionally as a server.

Software

Most of the machines are used as word processors, utilising the redoubtable SuperWriter. We are soon to change to WordPerfect, not because we dislike SuperWriter but because it was written before lasers printers were invented and has trouble running our Epson laser. I keep my experimental data on a database called DELTA and class exam results are temporarily calculated on SuperCalc 3 along with experimental data which has to be turned into graphs.

We have built up a vast collection of public domain software from friends, public bulletin boards, DEALS FOR READERS and so on. I don't know how we could live without some of the small utilities and I dread rebuilding the collection when we eventually go IBM-compatible *(in fact some Apricot-format utilities and the like will work unconverted on IBM-compatibles, not least because many of them came from IBMs in the first place — Ed).*

We had worried about incompatibility with the rest of the University, but in practice we've found that there is little or no transfer of computer data between departments. Enough departments still lack word processing facilities to ensure that all transfers of information are still on paper. The central administration has not helped by buying a very expensive standalone word processor which is incompatible with most micro systems. The university has now standardised on WordPerfect and MS-WORD; we can transfer our data to 5¼in disks by using KERMIT to send stuff down to the mainframe and then picking it up on our Xen-i (which has 5¼in floppies).

There is an underlying fear that information exchange should not be *too* easy between the central administration and other departments — lest they begin to want to take an active part in the decision-making process! There is also a spirited rearguard defence of the need for a mainframe; many of the older staff members cannot see that present-day micros can compete with most functions previously carried out by the mainframe, with the possible exception of major number-crunching. This means that our mainframe is still used for word processing more than anything else!

Teaching

One of the worst possible ways of using a microcomputer for teaching is effectively to put a book on the screen. It's far easier to read with your feet up on the hearth and a malt whisky by your side than staring at a VDU.

So we have tried to use the computer in ways which a book cannot imitate, and which form an interesting and stimulating *addition* rather than replacement for conventional teaching. In particular we have linked it up to a computer-controlled videodisc player, used 2D and 3D CAD, and produced simulations.

Laser discs

We bought a Phillips VP835 LaserVision disc player; and once we had worked out how to wire the serial cable correctly (see my articles on the RS-232 interface in APRICOT FILE *passim*!) we found it simple to mimic all the commands which could be issued from the handset in a GW-BASIC or Turbo Pascal program. These commands, mostly escape codes, could be sent over the serial link, effectively treating the player as if it was a wayward printer. This enables us to select a frame, freeze it (perfectly sharp on a laser disk, unlike VHS tape), fast-forward (again remaining perfectly sharp), reverse, switch sound on or off, move up or down, and so on.

The idea of interactive video is good in principle — use a computer to control access to a laser disk, select any of 50,000 frames in less than seven seconds.

The problem is a shortage of suitable discs for teaching medicine *(just to fend off any criticism about the spelling of 'disc', it's actually an industry convention to use 'disc' for optical storage discs and 'disk' for magnetically-encoded digital data disks — Ed)*. We have found a disc on cell motility, a disc of assorted medical slides, and a disc about all aspects of the knee. A trial disc of pathology slides has just been produced by the University of Leicester as well ... but that is it!

It costs some £2,000 per side to master a disc. But that pales into insignificance beside the cost of transferring 50,000 slides on to video tape at 50p to 75p apiece before it can even be mastered!

Laser discs in action

The quality of the few discs we have is very high. They are of great use to the students, and the ability to select even small video sequences rapidly and accurately (by frame number) makes the laser disc a useful replacement for projection slides in the traditional lecture.

We have written interactive tutorials based on these discs which ask the student questions and move back and forth over the disc in response to their ability and requests.

The most impressive programs use computer graphics overlayed on the video. This enables areas to be outlined or highlighted, with labels or questions superimposed on the display. The video provides the high-quality images unobtainable without a large amount of computer hardware; the overlay provides the flexibility required for good teaching. Unfortunately we have been unable to do this with Apricots, as the video board manufacturers just did not want to know; so we use BBCs with a GENLOC board instead.

We have produced a tutorial based on the knee disc which enables students to use a mouse to point at particular parts of the joint and call up further sequences illustrating movement, anatomy, blood supply, arthroscopy and the like. My colleague Dr. Derek Fry has also produced a neat solution to the problem of allowing complex syntax for entries by putting a series of boxes on the screen containing about 20 words. The user can build up a complicated request or answer using the words yet the program need never be written to handle unexpected input.

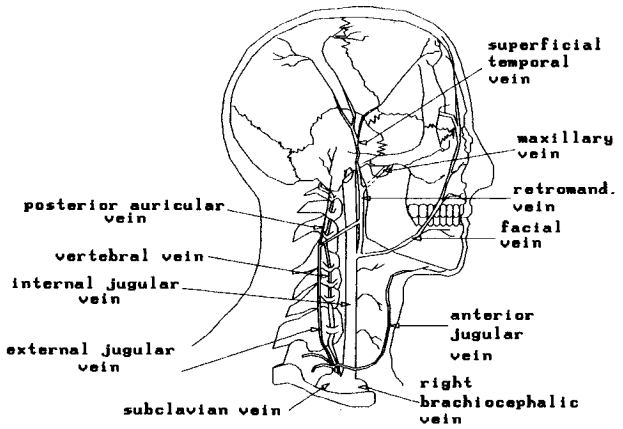
One of the best such systems I have seen in use was produced by Advanced Medical Systems for Ciba-Geigy, a laser disc tutorial about the care of heart attack patients. The video shows a man in trouble; the user can ask for vital signs, drugs and treatment to be given; and, on screen, the patient responds. The thing that brings you up short is that you can give the wrong treatment and watch the patient die. I can think of no better way of training doctors — next time the user is going to be very cautious about applying that particular treatment to his or her patients!

CAD in anatomy

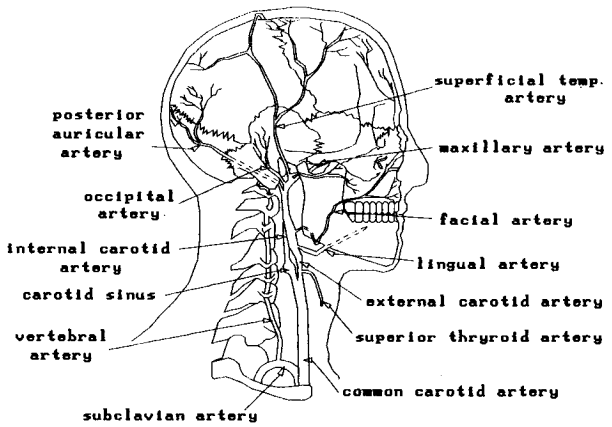
We have also tried using 3D CAD to produce diagrams showing the three-dimensional relationships of anatomical structures. First we used an add-in video controller board to produce the resolution and extra colours we needed, with the CAPITOL software from Graphicsaid for 3D drawing.

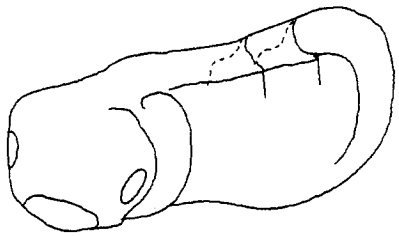
We found however that entering the coordinates required to make even the simplest anatomically lifelike structures was a mammoth task, even using a bit pad or mouse. Biological structures are rarely symmetrical, and it is impossible to build them up from standard shapes such as cubes and cylinders. Profiles through the object have to be traced in point by point and then the sections connected in three-dimensional space.

Main veins of the head and neck

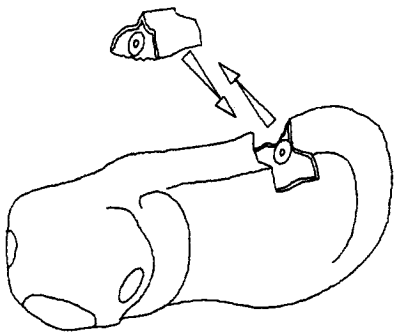


Main arteries of the head and neck

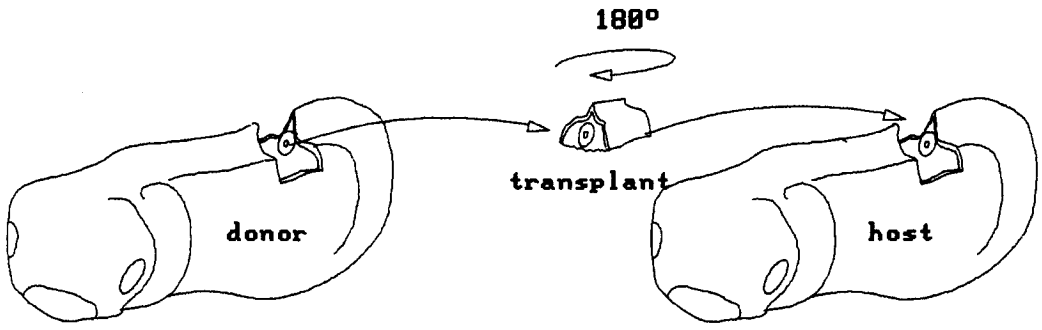




2a single or double cuts



2b control experiment with NO rotation



2c transplant from dyed "donor" rotated then placed in "host" embryo

Although we have produced a 3D representation of the inner ear and the relationship of blood vessels and nerves to the cochlea in this way, it remains very cartoon-like. In addition, it is still a wire-frame model. It can only be shaded if we lose the ability to move around the object, even to look out from the inside — and that is the whole point of using a computer; otherwise we might as well draw the diagram on a sheet of paper.

To overcome this we went to the Apollo computers in the computer-aided engineering suite at the University of Dundee. Spectacular machines, definitely; pity about the software! The software from PAFECS was abominable — typical of mainframe software, it was incredibly hard to use and bug-ridden.

Simulations

More successfully, we have written a simulation in the TOPCLASS authoring language (reviewed in APRICOT FILE Release 2.3). This will run on any of the Apricots or IBM-compatibles; it covers the methods used to study the brain.

Taking the form first of a tutorial followed by an assessment, the program presents the student with an imaginary brain and the tools of a fully equipped neuroanatomy lab. The student can then inject, operate or whatever to find out how the brain is connected. Obviously no materials are used, no animals are harmed: and yet the student learns far more than he or she would from a simple textbook.

We have included a straight and a humorous version, and the student can select which he wants. If he uses the wrong techniques repeatedly, wastes animals or materials, an imaginary supervisor hauls the unfortunate student into his office and berates or encourages him (all on screen of course). By actually seeing on screen the results (or sometimes the lack of results — this is a simulation of real life) the student soon realises which techniques are most useful in which situations.

This program obviously has a rather limited market (university biology, physiology and anatomy departments?) so we will have to market it on our own.

Lessons learned

So how has the influx of Apricots affected our department and our work? Not in the way we would have expected. The impact on our teaching has been very slight. The production of the 'Neuro-Sim' tutorial took almost six months — yet it is only an adjunct to one lecture in a 24-lecture course. And the knee disk, although great for teaching everything you ever wanted to know about the knee, does not touch the rest of the body.

The computers have however transformed our own research and publications. With the large number of micros and the wide range of our software, we have been able to attract students from the Maths and Computing departments to do MSc projects; and we have started a series of evening classes for the local public (in liaison with our Centre for Continuing Education) in basic computing. We have put on MSC-sponsored courses for the unemployed, and 'Wider Opportunity for Women' courses start this month.

The staff have also been affected. Now all but the most hardened computerphobes uses the micros for word processing. We have learnt a lot about everything from assembler to the RS-232 interface. This has led to many articles and presentations at meetings up and down the country.

I think that is the take-home message. As a teaching medium, the computer can be wonderful; but until there is greater sharing of software, only a few programs can be produced by each teacher and that will never replace much conventional teaching. Is it worth spending six months on a replacement for a one-hour lecture?

But the impact on the teacher should not be underestimated: training in computer applications, word processing, programming ... it all adds up. After the CTISS grant finished, our programmer went on to get a job as the microcomputer advisor for the University — largely on the strength of the expertise he had picked up in the Anatomy Department. ◆

Further information

- A full report of this work can be obtained by sending a large SAE to Department of Anatomy, The University, Dundee DD1 4HN. A small charge may have to be made to cover the cost of photocopying to non academic institutions (the cuts, you see).
- The work of the CTISS, including reports on many of the other CTISS projects around the country can be obtained from CTISS, South West Universities Regional Computer Centre, University of Bath, Claverton Down, Bath BA2 7AY.
- A listing of the microcomputer usage in the University of Dundee and copies of Neuro-Sim in Apricot and IBM versions can be purchased from the author at the address above.

Batch File Recipes

Return to directory, date-stamped printing

By Guy Sturges

Direction

Here is a simple way to restore drive and/or subdirectory paths in BAT files:

```
A>  COPY C:CDSPACE C:GOBACK.BAT
A>  CD >> C:GOBACK.BAT
```

It uses an existing text file called CDSPACE which contains only three characters — CD[space] (no carriage return/line feed). The directory-restore batch file GOBACK.BAT starts as a copy of CDSPACE.

The MS-DOS command CD replies with the current drive and directory when it's used without parameters; so line 2 and the double-arrow piping means that the current drive and directory with be added to GOBACK.BAT. Since CDSPACE included no Return, after line 2 is executed GOBACK.BAT will contain a single line reading ...

```
CD [DRIVE:\DIRECTORY]
```

Do whatever processing you wish on another drive and/or directory then type 'GOBACK' to get back to the original drive and directory.

To use this idea in order to get back to the root directory on the current drive, you'd better make sure you're there first:

```
A>  COPY C:CDSPACE C:ROOTBACK.BAT
A>  CD\
A>  CD >> C:ROOTBACK.BAT
```

HEAD.BAT

This is a neat way to label and date a document for printing. HEAD.BAT is used with a filename as its one parameter — for instance,

```
A>  HEAD README.DOC
```

HEAD.BAT works by creating a temporary file containing the material to be PRINTed with a title and a date-stamped 'end-of-document' message.

Line 1 stops the echo, line 2 removes the 'ECHO OFF' message from the screen to tidy the display. Line 3 starts to set up the scratchpad by creating a file called TEMPFILE with a blank line in it (ECHO followed by a dot produces a blank line); line 4 produces a directory listing for the nominated file (README.DOC in this example) and adds that as a single line to TEMPFILE — make sure you use the same date separator as DIR with the FIND command here (the COUNTRY setting in CONFIG.SYS will determine exactly what separator is used).

Line 5 then adds a blank line to the temporary file and line 6 follows that with the text of the file to be printed.

To tidy things up, lines 7 and 8 add two blank lines at the end of TEMPFILE and line 9 puts on the text 'END OF DOCUMENT' to the temporary file. Line 10 gives another blank line.

Line 11 copies STOP.BAT to a file called PRINTED.ON. STOP.BAT is just an already-existing empty file which I use to stop any batch file immediately. The point of line 11 is simply to create a totally empty file; but even files of zero bytes get a directory entry and a time- and date stamp — so line 12 can do a directory listing for PRINTED.ON and pipe the one line containing its name and today's date to the end of TEMPFILE.

Line 13 prints the temporary file with headers and footers — while experimenting, it might be as well to TYPE it instead — and the last two lines kill the working files for the next use. ◆

Line numbers are included for reference — don't enter them when keying in this batch file.

```
1   ECHO OFF
2   ECHO $[2K$[1A$[2K$[1A
3   ECHO. > C:\TEMPFILE
4   DIR %1 | FIND "-" >> C:\TEMPFILE
5   ECHO.  >> C:\TEMPFILE
6   TYPE %1 >> C:\TEMPFILE
7   ECHO.  >> C:\TEMPFILE
8   ECHO.  >> C:\TEMPFILE
9   ECHO.END OF DOCUMENT >> C:\TEMPFILE
10  ECHO.  >> C:\TEMPFILE
11  TYPE D:\STOP.BAT > C:PRINTED.ON
12  DIR C:PRINTED.ON | FIND "-" >> C:\TEMPFILE
13  PRINT C:\TEMPFILE
14  DEL C:\TEMPFILE
15  DEL C:\PRINTED.ON
```

Contribute!

Why not share your own useful utilities? Let us have your own home-brewed batch files, and we'll write them up for this *Recipe* series.
Just drop us a line at APRICOT FILE, PO Box 509, London N1 1YL.

Review

Perfect Partner

DataPerfect reviewed

by Alan D. Craxford

I have been an ardent fan of WordPerfect since latching on to it in place of WordStar and MultiMate some four years ago. I have also used Delta Professional for the last three years, and although it is not a true relational database I had developed several applications for my medical practice.

Delta has its limitations, of course; but the move to a totally different program — such as dBASE III Plus — was a daunting prospect. So I was more than intrigued when Sentinel Software started advertising DataPerfect. The ads promised a full-power relational database with utmost ease of programming and application; I acquired my copy ten weeks ago. What follow are my first impressions and an account of my major opus using this new package.

What you get

DataPerfect comes with two manuals: a ring binder containing the database designer's instructions and a paperback manual for the database user (the latter is perhaps an unfortunate format if you expect more than one operator to be using the system). Between them these two are less than half the length of the Delta manual, and they're minimal compared to other packages.

The instructions are succinct but clear and rely heavily on following the action on the screen. The short preamble describing DataPerfect's capabilities and databases in general is followed by a series of tutorials to illustrate the principles; most of these are ok, but the final and most complex example used a scheduling and billing protocol which I failed to understand — and that made the demonstration impossible to follow.

DataPerfect itself is a fairly compact program — the COM file is 56K bytes, the SYS file is 106K and an OVL file is 63K. There are also a number of applications (stock control, expense account, family tree, meeting scheduling, school reports, recipe index) which provide annotated examples for study and modification. These occupy two 5¼in disks or one 3½in, both formats being supplied.

The programs are not copy-protected and are easily moved into a subdirectory on a hard disk. Installation into WordPerfect Library is also straight forward.

The keyboard

There are two keyboard templates, for PC- and AT-compatibles respectively. Given the initial problems many of us experienced with WordPerfect and the Xen keyboard, I had hoped for a suitable template for DataPerfect; but no — SSI informed me they had to print the Xen-i templates themselves for WordPerfect, PlanPerfect (also known as MathPlan) and WordPerfect Library. SSI felt there would only be a small requirement for the old-style keyboard, everyone else having gone over to the new non-MicroScreen variety. I've had to make my own.

The literature promises compatible use of the function keys throughout WordPerfect products. After a fashion, that's true; but of the 40 options named on the function-key template in WordPerfect, only thirteen are the same for DataPerfect (this compares with 18 similarities to WordPerfect Library and 19 in PlanPerfect).

The first feature to come to terms with is the use of the keyboard. The natural sequence of movement from field to field is by use of the 'arrow' keys. DataPerfect uses TAB and SHIFT-TAB for this function. The left-arrow and right-arrow keys move the cursor within a field. Up-arrow and down-arrow carry out functions dependent on whether the database is in create or edit mode.

Creating a database

The first DataPerfect screen lists the databases available at present. To create a new one, the INS key is pressed and a name for the database is requested. DataPerfect works by holding information in files and creating links between these files by designating common fields; as many as 80 files can be set up for an application.

Each file has its own data entry screen called a 'panel'. Panel definition is free-form on the lower two-thirds of a blank screen; the upper third is used for messages which may come from the system, the database or instructions specific for the application.

Fields are inserted using the F9 CREATE key and then formatted as alphanumeric, upper case, numeric, floating decimal or formatted numeric. Fields may also be hidden from view, non-edit, mandatory, auto-entry or subject to calculation. They may have range limitations, auto-increment or associated formulae. Activation of a field may take place when the record is created, edited or saved. One further field type allows free form text entry so that a multi-line address can be accommodated within the one field.

Once the fields have been written with their accompanying text, the panel can be sized and moved on screen, coloured (eight background and 16 foreground colours are available with a colour card) and renamed appropriately.

The panel and field information is written to a description file and data is stored in individual files associated with each panel — it's recommended that each file is given a common extension for housekeeping purposes.

Storage requires the setting up of a unique index. Definition takes place using the CONTROL-F8 key which produces a sub-menu allowing creation or

editing of existing indexes. Fields are added together to create a key and this process is done on screen using the panel. Each field is selected in turn by the F4 key.

Relating files

DataPerfect ties its related files together in one of two ways.

When a panel has a field in common with another panel, a 'doorway' is created that is used to link the information together. This is shown on screen as a small diamond. In an invoice database, for instance, Panel 1 may hold the invoices and Panel 2 the customer's personal details; both would be linked together by a Customer reference number. The Customer reference field would be set up as a doorway, and what happens at this point depends on whether the database is in 'create' or 'edit' mode and how the doorway was described. It may allow the operator to pass through it to enter new information in the related file or may look through it to retrieve information already held. Subsidiary panels may also be tied to a main panel by the use of a door (which appear as a single character stippled field).

Each field may also have a 'lookup' list, a feature that allows easy access to groups of records. The lookup list is designed again as a point-and-shoot manoeuvre listing the fields in the order they should appear. This is activated on the appropriate field by pressing the up-arrow key. Scrolling through the list which appears in the top third of the screen and then pressing the Enter key will make that record current. Each list requires an index which will determine the order in which the records appear. The index may also have an exclusion list so that blank fields are ignored.

Careful planning is required to gain the desired effect as the important records: bills outstanding are usually the empty ones, for instance. I also found when working on a database containing some test data that frequent access to the SHIFT-F9 SYSTEM key was required to regenerate modified indexes.

Conditions

Formulas and conditional processing are perhaps the most important aspect of programming, and the way in which these are implemented is fundamental to the design and operation of a database.

DataPerfect uses the same point-and-shoot mode to design formulas that incorporate fields from simple instructions that fill in the value of one field with another to the most complex forms of IF-THEN-ELSE statements. Any field in the database may be incorporated in a formula — tab across the panel on screen, move through doors or doorways with the down-arrow key, and press the F4 SELECT key to chose the field. There are also system variables, such as TODAY, which carry out date processing.

A formula will then appear which includes the relative positions of panels, doorways and fields defined in a way that is largely transparent to the operator:

```
IF P2F4P12F16 >= (TODAY-P1F5)
THEN P2F5
ELSE P2F6
ENDIF
```

IF field 16 on panel 12 reached through door(way) 4 on panel 2 is greater than or equal to the number of days obtained by taking the date in field 5 of panel 1 from today's date, THEN put the value of field 5 on panel 2 into this field or else put the value of field 6 on panel 2 into this field). Complex conditional nested formulae can be arranged, but each is based on logical conditioning — it will produce '1' if it is true and '0' if false. Values may also be totalled (either by addition or subtraction) into other fields.

Reports

The report generator, activated by SHIFT-F7 or PRINT key, allows data to be output in several different ways. Each report must be written for a particular target panel because this will maintain the relative positions of fields within the panels and files. A new menu appears with a system 'Built-In' report which forms the basis for all subsequent tailored output. Reports can be set up to output to the screen, the printer (serial or parallel connection), disk file or clipboard.

Preparing a report begins with a sub-menu that identifies the destination, allows the choice of index and search criteria and the format of the output. This may be in MS-DOS ASCII text or WordPerfect's 'merge code' format.

Following this the report is designed by modifying a printed form. This is divided into sections —

```
FIRST PAGE HEADER
OTHER PAGE HEADER
TWO-LEVEL REPORT HEADER
REPORT BODY
TWO-LEVEL REPORT FOOTER
PAGE FOOTER
FINAL FOOTER
```

Each portion of the report has its own options accessed by the CONTROL-F7 REPORT OPTIONS key. A simple report based on a single panel will use the above list and fields are placed appropriately using the F4 SELECT key in a point-and-shoot fashion.

Sub-reports allow the building of more complex reports where lists of many records from a subsidiary panel may be brought through a doorway into the main report. Sub-reports may be nested or built up in parallel within the report body.

The report generator also has the use of report variables. These may be modified using formulas similar to those mentioned above, and they can be printed in the headers and footers to carry dates and totals. They are also useful to create personalisation of form letters — for example, field

4 on panel 2 might hold the individual's gender and a designated report variable could be set up to interpret this accordingly:

```
P2F4='M' THEN 'He' ELSE 'She' ENDIF
```

The report variable may also be used to 'print' back into the database thereby updating or altering a field, for instance the date a report was sent.

DataPerfect in operation

My first problem with DataPerfect was to rid myself of the peculiarities of other programs. Lookup tables failed to work, indexes became garbled, doorways did not go where they should.

It transpired that I was trying to make things too complicated: there is no such thing as a 'key field' and initially I included all fields on a panel in the index list. Once I had gathered that my clients could be accessed using a unique identifier, life became easier. When I realised that bills could be listed by client identifier and date of account, lookup lists started to work.

I had a simple home accounts program written and working in an afternoon; the same exercise using Delta took me two weeks a year ago.

With this under my belt I decided to start a large application for hospital use. This was to be an In-Patient and Waiting List Administration system which would generate automatic discharge summaries for general practitioners and produce the statistical information that health authority managers require these days.

- Problem 1: I set up a formula to calculate age from the date of birth, but the formula interpreter failed to function. SSI said this was a known bug and my master diskettes (dated 02-02-88) were sent off to be upgraded (10-02-88). My 3½in diskette did not come back.
- Problem 2: I wanted a field that would accept only 'M' or 'F'. Conditional formulas failed to function and the database was plagued with a large number of undocumented error messages. Another phone call to SSI determined that this was another known bug; my master diskette was sent off again to be upgraded (10-03-88)
- Problem 3: Report variables fail to initialise to zero. This is *not* a known bug, but SSI agreed to check it out. I still await the outcome.
- Problem 4: Complex reports that access several panels hang up with an error message about the CONFIG.SYS FILES= entry when they attempt to create a disk file. Again no reason has been found; this is of low importance as in practice these files are stored in a different fashion.

Despite these, however, the database has developed into an application with 22 linked files.

Here the integration of DataPerfect into the WordPerfect Library environment comes into its own; formatting of letters and the use of a cut sheet feeder on the printer is simple using WordPerfect, and the common format allows easy transfer of information across the clipboard of WordPerfect Library. The production and printing of departmental form letters on a weekly basis can be fully automated using a Shell Macro. Secretaries, clerical staff, doctors, nurses and administrators have all agreed that it is simple to understand.

There is still much programming to be done in the creation of reports but it will be going on trial alongside the present manual system in the orthopædic department in the autumn. If successful, it will go 'live' across the surgical division in the next financial year. Prior to this we had looked at a custom-written medical system which would have cost £6,000 per installation.

Last words

I would certainly recommend DataPerfect as a full-featured, powerful relational database. It is fairly straightforward to program and the programming language is transparent to the end-user. Once the small quirks of the keyboard are understood, data entry is also simple — and the panels can be fully documented with applications messages. ◆

DataPerfect in summary

Maximum files per database:	80
Maximum records per file:	16 million
Maximum fields per record:	80
Maximum size of index:	2MB
Max index entries per data file:	16 million
Maximum size of fields:	
— numeric:	14 digits
— alphanumeric:	78 characters
— text:	32,000 characters
Maximum reports per database:	150

DataPerfect

Description:	Relational database system with links to other WordPerfect Corp products
Supplier:	Sentinel Software
Address:	Wellington House New Zealand Avenue Walton on Thames Surrey KT12 1PY
Telephone:	0932 231164
Price:	RRP is £495.00, but I paid £295 and have seen DataPerfect advertised for less
Configuration:	IBM-compatibles
Conclusion:	Powerful, versatile, easy to use — a good buy for WordPerfect afiçionados.

Readers' Writes

Your chance to have a say

Reidel responds

In the *Q&A* pages for APRICOT FILE Release 3.6 you state that you sent me the 'INVALID OR CORRUPT SYSTEM DISK' problem related to MANAGER'S SETUP and my BIOS 3.1.2 fix. But hell, I did sent an analysis stating that the damaged disk at was *not* caused by SETUP; the invalidity was due simply to it not having a HEADER.SYS file (although this is stated somewhat tersely by the message). There should have been plenty of time to read my letter and adjust the *Q&A Clinic* accordingly.

But to publicly state that my disk is being withdrawn because of it being dangerous to your hard disk's health severely damages my reputation as hero hacker and means a loss of face (I had a Chinese girl friend, so I know of faces and the loss thereof) for me and my ancestors (need I add that one of them was of nobility? Ritter (Knight) Friedrich Wilhelm von Hackländer, 1816-1877).

Ok: let me state again that all I did was make the screen output of the ladder-driven programs compatible with BIOS 3.1.2. And I did try to crash my hard disk with SETUP: it did *not* crash. Retaining KEYEDIT, FONTEDIT, LOGOEDIT, and SERIAL, and of course MANAGER itself, (don't laugh, my father — aged 65 — uses it and is happy), and maybe SETUP too (as it works), may be a good policy for the future life of AP026.

Jost Riedel
Bad Karlshafen, West Germany

Red faces all round at TP Group, via a loss of communication in the 20ft or so that separates DEALS FOR READERS supremo Roger (who received Jost's letter) and newsletter editor Dennis. As a result, we were a bit too blunt in the *Q&A* comments on AP026 and Jost's brilliant piece of absolutely marvelous patching, for which all Apricot users everywhere ought to be well in awe. Seriously, we withdrew AP026 because there are caveats about using the adapted utilities thereon: and the volume of phone calls with queries and cries for help was just too great.

APE update

On re-reading my review of APE for APRICOT FILE Release 3.7 I seemed to be emphasising the negative aspects. It is relatively easy to tip up APE ...when you're trying to! On the other hand, when it works it does so effortlessly. But when APE did fail, it was easily explained — often things which the IBM couldn't handle for hardware-specific reasons.

Several further conclusions arise. First, it is surprising just how much Apricot-specific software there is: where *did* those guys find out about the innards? Second, the Apricot really is streets ahead of the IBM — even today.

And finally, the Xen-i IBM clone still contains several bits of the old-style Apricot: for example, cursor positioning still works with ESC Y CHAR(31+ROW) CHAR(31+COL). That's fortuitous, since ANSI codes in MS-BASIC (yes, that works!) might look something like ...

```
PRINT CHR$(27)+'E';ROW;';';COL;'f'
```

On the IBM the ROW and COL numbers are surrounded by spaces, which the screen rejects!

Also, the Xen-i have BIOS 3 INTECH text and graphics, which probably implies alternate attributes and keyboards as well as portability of code from the PC/Xi/F series.

What about a regular column of snippets from readers like the above?

Eddie Bromhead
Yateley, Hants

Good idea. Any and all contributions welcome on the relationship between Xen-i and old-style Apricots.

PC-286 deals?

You have never said why the PC-286 upgrade was never offered through APRICOT FILE at a reasonable price (see APRICOT FILE Release 2.12). I have investigated discount purchasing, as I suppose you did; I approached a local ex-Apricot dealer explaining that an upgrade would cost £1,000, that I did not want to pay said sum, and how about splitting the dealer profit? An agreement was reached and investigations proceeded. Result — they ran into a brick wall. Apricot said that was the cost to dealers, to end-users, to all and sundry.

Undeterred by this, and convinced that there must be lots of these conversions laying around ready to go (gathering dust?), I am going to try offering Apricot a lesser sum and see what they say.

Cynically, I suppose if we all wait another 12 months they will be sold at knockdown prices anyway ...

Brian R Scott
Mannofield, Aberdeen

Yes, we should have given subscribers the Bad News. As Mr Scott has discovered, Apricot just isn't giving the usual big dealer deals. A favoured few dealers have been able to get PC-286s at a small discount; but Apricot declined to deal with us direct, and the dealer discount is so small (less than 20 per cent, we hear) that there wouldn't be any profit for anyone if we bought from one of the few to resell to APRICOT FILE readers.

As for dust-gathering stocks, that might turn out to be the case in some months' time. But for now, Apricot can utilise the major components of the PC-286 (principally the replacement motherboard) in its Xens — the design is virtually identical. So at present Apricot has little incentive to discount or to clear out the stocks. ◆

The Workshop

How to do it:

Floppy disk drive swaps — straight replacements, single- to double-sided upgrades

By Roger Gann

In response to a number of requests from subscribers, we're running an occasional series of 'how to' Workshops on hardware upgrades and fixes derived from the notes supplied with the relevant DEALS FOR READERS products.

Installation

These notes apply only to fitting the Sony D31 (3½in single-sided disk drive) and D32 (double-sided) to Apricot PCs and Xis — they don't cover the F series machines.

1. Switch off the Apricot, remove the power lead, unplug the keyboard and monitor, and place them to one side. Also remove any peripheral leads that are connected.

2. Using a Pozidriv screwdriver, remove the three silver bolts on the rear panel of the system unit. The rear panel should now come free. Carefully pull the rear panel off — but not too far, it's still connected by cables to the motherboard!.

3. Remove the top cover simply by lifting it off.

4. Remove the power lead and data ribbon cable from the rear of each disk drive. This is a fiddle as there isn't much room behind drive B. Next remove the four bolts, two per side, that hold the disk drive sub-chassis to the main chassis. The entire disk drive sub-assembly now comes free.

5. Turn the sub-assembly upsidedown. Each disk drive is held in place by four small bolts, two each side. Remove the four bolts and extract disk drive A from its bay. The eject button and its spring will fall away — catch them!

6. Offer up the new drive — ensure that the red LED indicator fits into its aperture in the front bezel and that the eject button and spring are in place.

7. Replace the four bolts. Make sure that the disk aperture on the drive accurately matches that of the bezel; if they don't align, that can cause the disk to foul the sides of the aperture. Adjust the bolts as necessary. Repeat this procedure for the other drive if you are replacing that as well.

8. Reassemble the disk drive sub-assembly — replace the four bolts and the various cables. It is virtually impossible to get them round the wrong way; as a guide, note that the red edge of the ribbon cable goes to Pin 1.

9. Set the small DIP switch at the rear of the disk drive to match that of the drive that it replaced. If you are replacing a single-sided disk drive with a double-sided, you'll note that the D31 (single-sided) has a two-position switch while the D32 (double-sided) has a switch with four positions. Generally, drive A is indicated by switch position 1 and drive B by position 2.

Testing

10. Reboot the machine in its dismantled state in order to verify correct installation — ie that the one on the left really *is* drive A!

    If the drive assignments are wrong, switch off. Choose a different switch position, switch on again, and reboot.

    The MS-DOS sign-on message will indicate the total installed floppy disk capacity — 1440KB for a machine with twin double-sided floppies, for instance. If the message indicates an unexpected capacity (like 720KB when you've fitted two double-sided drives) something is obviously amiss. Disconnect one of the drives completely and concentrate on getting the other correctly installed and/or assigned. In particular, go back and check the cable connections — make sure that you have 'caught' all the pins on the data ribbon cable connector.

    It sometimes saves time to reboot the machine in its dismantled state in order to verify correct installation. As with all electrical appliances, though, exercise due care when turning things on while the computer is dismantled!

New Boot ROMs

An older Apricot PC will sometimes refuse to recognise the presence of a 20MB hard disk and/or double-sided drives and thinks they're all single-sided floppies.

In this event you'll need updated Boot ROMs. These are plug-in chips located on the motherboard just underneath the righthand front corner of the power supply box. To replace them you will have to remove the rest of the chassis.

11. Undo the four large bolts including the earth tags; note the position of these leads. Unplug the various power connectors that link the power supply unit to the motherboard. Remove the metal chassis.

12. With a small flat-bladed screwdriver, carefully prise up each ROM — be careful not to bend any pins: it will be a tight fit. Note which ROM is which — HIGH or LOW — and which end of each chip has the notch.

13. Replace the old ROMs with new chips (they must be either rev.7 or rev.9) and make sure they're the same way around as the originals. The pins on the ROMs are usually slightly splayed; so offer up the ROM and lightly insert one row of pins into the sockets. Gently push against these with your thumb until you can get the second row of pins in. Now you can firmly push the chip into the socket.

14. Reassemble the machine. This is the reverse of dissassembly; don't forget to reconnect the earth and power leads. You may have to turn the machine upside down in order to tighten up the rear panel bolts. This is because the power supply 'hangs' off the bolts and drops down when the bolts are removed. ◆

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Postal address

TP GROUP
PO Box 509
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Personal calls and deliveries

Unit 4, 47-51 Wharfdale Road
London N1 9SE, England

Phone, E-mail, Telex

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Customise your keyboard

Part Four: Matching the MicroScreen display, MS-DOS keys and IBM keys

By Guy Sturges

In the last instalment I described how to modify key layouts to include ALT keys and/or format the keyboard to match an IBM 3270 terminal. That's all very well; but it would be nice if the MicroScreen showed what was actually on the keys.

MicroScreen for GWBASIC

Take the modified GWBASIC from the last instalment, where I added strings to the MicroScreen keys. Let's see what can be done to *match* them to the MicroScreen. This is relatively simple using BAT files.

BASIC.BAT

```
ECHO OFF
ECHO ^[W^[z^[V
ECHO ^[W^[/?^[Y HCHR$ GOTO  GOSUB PRINT LOCATE
   DRAW^[V ECHO ^[W^[HFILES SCREEN AUTO  RENUM
   CURSR SYSTEM^[V
GWBASIC %1
ECHO ^[W^[s^[W^[Y HREN  COPY  TYPE  CD\  ACTVTY
   PRINT^[/?^[V
```

BASIC.BAT sets the MicroScreen prior to calling GWBASIC — a modified GWBASIC, incorporating the GWBASIC.KB at location 1:0220 (1:0320 from IP=100) that includes MicroScreen keys and reformatted keyboard.

The first ECHO skips the comments, the second clears the MicroScreen; the next two load the bottom and then the top line of the MicroScreen. The GWBASIC is the real thing, the last two ECHOs reset the MicroScreen to the MS-DOS defaults. Simple, no?

Special Escape codes used are:

^[/?	sets all LEDs on. The questionmark has a value of 3F hex, 00111111 in binary, and with this code the righthand six bits corresponds to the six LEDs — switching them on when set to '1'. So ^[/9 (hex 39, binary 00111001) would set the first three and the last LED.
^[Y H	addresses the first character of the bottom line of the MicroScreen.
^[W	starts writing to the MicroScreen
^[V	stops writing to the MicroScreen
^[s	clears the MicroScreen and restores the clock.

MicroScreen for the IBM emulator

There are many versions of the EMIBM emulator, but the most flexible is the generally-available version 1.3.2. This does not have an embedded keyboard table, unlike later versions; so you can configure your own keyboard table and hence set up the MicroScreen accordingly — but it does mean it is slightly slower to load and unload because of the extra steps involved.

IBM.BAT

```
ECHO OFF
IF "%1" == "off" GOTO OFF
IF "%1" == "on" GOTO ON
ECHO EMIBM requires either ON or OFF
GOTO END
:ON
ECHO ^[W^[Y HF9  F10  PGUP  PGDN  CALC
   PRINT^[/?^[V PROMPT ^[p^[g
KEYSPEED 9
GTLDKEY IBM
EMIBM
GOTO END
:OFF
EMIBM NO
GTLDKEY GTALT
KEYSPEED 2
ECHO ^[W^[s^[W^[Y HREN  COPY  TYPE  CD\  ACTVTY
   PRINT^[/?^[V
:END
```

Note that the ECHOs to the MicroScreen have to be done *before* EMIBM is loaded; otherwise they are simply displayed on the screen because EMIBM does not accept Apricot escape sequences. Likewise the resetting of the MicroScreen must be done *after* the emulator has been removed.

I have included a routine to change the key repeat rate to be slow when using the emulator as the screen display can't keep up if a key is held down. This is reset to 'fast' (KEYSPEED 2) when the emulator is removed.

The panel lists the key codes which can be used to configure your own keyboard, and using the above example, your MicroScreen. The list refers to EMIBM version 1.3.2. Later versions support the NUMLOCK key, which allows the keys on the numeric keypad to work like those on an IBM PC. But without NUMLOCK all the cursor movements are immediately available, the PGDN and PGUP keys can be put on to MicroScreen keys, and HOME and CLEAR equate to HOME and END; there's no need to be encumbered by this stupid invention of IBM.

Although the ALT key can be configured and used as on an IBM PC — using ALT and three numeric-pad keys to create a character by entering its ASCII code — this will not work for character codes higher than 128. Instead it generates one of the key values listed, which get acted on by the emulator. ◆

EMIBM key codes

Decimal	Hex	Function
128	80	none
129	81	ALT 1
130	82	ALT 2
131	83	ALT 3
132	84	ALT 4
133	85	ALT 5
134	86	ALT 6
135	87	ALT 7
136	88	ALT 8
137	89	ALT 9
138	8A	ALT 0
139	8B	none
140	8C	ALT A
141	8D	ALT B
142	8E	ALT C
143	8F	ALT D
144	90	ALT E
145	91	ALT F
146	92	ALT G
147	93	ALT H
148	94	ALT I
149	95	ALT J
150	96	ALT K
151	97	ALT L
152	98	ALT M
153	99	ALT N
154	9A	ALT O
155	9B	ALT P
156	9C	ALT Q
157	9D	ALT R
158	9E	ALT S
159	9F	ALT T
160	A0	ALT U
161	A1	ALT V
162	A2	ALT W
163	A3	ALT X
164	A4	ALT Y
165	A5	ALT Z
166	A6	ALT F1
167	A7	ALT F2
168	A8	ALT F3
169	A9	ALT F4
170	AA	ALT F5
171	AB	ALT F6
172	AC	ALT F7
173	AD	ALT F8
174	AE	ALT F9
175	AF	ALT F10
176	B0	none
177	B1	F1
178	B2	F2
179	B3	F3
180	B4	F4
181	B5	F5
182	B6	F6
183	B7	F7
184	B8	F8
185	B9	F9
186	BA	F10
187	BB	none
188	BC	none
189	BD	none
190	BE	none
191	BF	none

Decimal	Hex	Function
192	C0	CTRL LEFT
193	C1	CURSOR RIGHT
194	C2	6
195	C3	CTRL RIGHT
196	C4	CURSOR DOWN
197	C5	2
198	C6	CURSOR UP
199	C7	8
200	C8	PGDN
201	C9	3
202	CA	CTRL PGDN
203	CB	PGUP
204	CC	9
205	CD	CTRL PGUP
206	CE	CTRL HOME
207	CF	CURSOR HOME
208	D0	7
209	D1	INSERT TOGGLE
210	D2	0
211	D3	DELETE
212	D4	.
213	D5	none
214	D6	*
215	D7	ESCAPE
216	D8	PGDN
217	D9	BACKSPACE
218	DA	none
219	DB	none
220	DC	RETURN
221	DD	5
222	DE	—
223	DF	+
224	E0	TAB
225	E1	none
226	E2	CURSOR LEFT
227	E3	4
228	E4	END
229	E5	1
230	E6	CTRL END
231	E7	SHIFT F1
232	E8	SHIFT F2
233	E9	SHIFT F3
234	EA	SHIFT F4
235	EB	SHIFT F5
236	EC	SHIFT F6
237	ED	SHIFT F7
238	EE	SHIFT F8
239	EF	SHIFT F9
240	F0	SHIFT F10
241	F1	CTRL F1
242	F2	CTRL F2
243	F3	CTRL F3
244	F4	CTRL F4
245	F5	CTRL F5
246	F6	CTRL F6
247	F7	CTRL F7
248	F8	CTRL F8
249	F9	CTRL F9
250	FA	CTRL F10
251	FB	none
252	FC	none
253	FD	none
254	FE	none
255	FF	none

The Q&A Clinic:

Questions by subscribers, answers by APRICOT FILE

Between us, the staff of APRICOT FILE and our contributors offer an unusually wide range of expertise and experience. As many subscribers will know, we handle a lot of queries each month by mail or by phone; and every so often we run the Q&A page to present what we feel are the more interesting and/or useful of these. If you want to make use of the service, just drop us a line ...

Q. Psion Xchange

Occasionally the keyboard will lock up on a QUILL spreadsheet, with both disks spinning. CONTROL-C and the like have no effect, and rebooting is the only answer ... unless you have another solution?

A. This one has totally baffled the panel. Can any reader offer advice, experience or help?

Q. FAT and fiction?

The *MS-DOS Bible* by Steven Simrin says the FAT should be two bytes long; on my F2, it's three bytes. And the disk identification in the first byte is shown as FE, which the book says means a *single*-sided disk with eight sectors per track — even though the disk is actually a *double*-sided 720KB format. (An IBM double-sided double-density 720KB 3½in disk and an Amiga 360KB disk both have an FD as the first byte of a two-sector FAT; the books says FD is a double-sided nine-sectors-per-track disk.) What do you think about it? Which is wrong — the book, my FORMAT.EXE, or my Apricot F2?

A. Probably the book. The MS-DOS documentation says that a particular implementation of the operating system *may* use the first byte of the FAT to identify the media type; and the meaning of the MEDIA-ID byte is only defined in the *MS-DOS Bible* manner for IBM-compatibles — Simrin is obviously talking about 360KB 5¼in IBM disks. What's more, FAT length *always* varies with disk size; with MS-DOS 3 a FAT entry is 1.5 sectors (not bytes!) for standard floppies, two sectors for bigger disks (meaning those with more than 4,085 clusters), three sectors for IBM double-sided 720K 3½in disks. That last is the same for Apricot double-sided floppies, for Apricot decided to adopt its own FAT standards with FC and FE descriptor bytes for single- and double-sided disks. In other words Simrin is right for IBM disks, FORMAT and the F2 are right for out-of-step Apricot.

Q. Software upgrades

I hope this doesn't make me sound too green, but although I have been a user for more than three years I am left puzzled by talk of entitlement to software upgrades. Should they have been offered automatically? And are they usually (or ever) free on returning the earlier diskettes? My ignorance may be something to do with the fact that my dealer went broke shortly after I lease-purchased my Apricot in 1984. As a result I am still using MS-DOS 2.11, BIOS 1.5, SuperWriter D1.09, SuperCalc 1, and a SuperPlanner that does not bleep me as entered appointments become current.

A. Different software suppliers have different policies regarding software upgrades. But in general, an update to accommodate major bug fixes will usually be supplied at no charge to *bona fide* users who return their master disks; functional upgrades — offering extras, enhancements, extensions — will often be supplied free or at a modest charge; major rewrites of the software that substantially alter its performance, content or capability may be supplied at a discount. Notification of the availability of upgrades should in theory come from the dealer, though some software houses will mail all their registered users direct.

On the other hand, all this normally applies to *current* products. In the case of Apricot's 'Super' series, we're talking about software that is no longer supplied. What's more, the people at Computer Associates take the view that the supplier was Apricot plc; so you can't ordinarily go back to CA — who wrote the stuff — to get any updates at all.

In short — Apricot users were entitled to ask for at least one nominal-cost upgrade (of SuperWriter, to version D1.09). But that's all in the past now, and your best bet is to find someone who has the most up-to-date versions of the Super packages and is prepared to mail you a copy.

Q. Quad-density floppies

Is it possible to fit a 1.44MB 3½in floppy drive to an Apricot PC/Xi? And is there a version of the FORMAT program that will run with it?

A. No and no. Not as far as we know, anyhow.

Q. Chip upgrades

Is it feasible to swap the memory chips in an Apricot Portable to give more memory on the main board and avoid using an expansion slot? I have a 256K machine.

A. On the PC and Xi it can be a fiddly business, but chip swaps on a 256KB Portable are quite simple for the averagely-

competent wielder of a soldering iron. Buy thirtytwo 256Kb RAMs like Intel's part no. 41256-120 (these have a 120ns access time, which is to be preferred, but 150ns RAMs will do — the part-number suffix give the speed, so they'll be marked 41256-150). Remove all thirtytwo of the Portable's 64Kb chips — they'll probably be labelled 4164 — and insert the new RAMs (you might want to solder in sockets first, if you want to be able to remove the chips easily in future). Then seek out jumper J7, located just below a couple of resistors labelled R41 and R42, and connect the two rightmost pins (ie those below R42). That's it.

If you use your toes as well as your fingers, some nifty mental arithmetic should tell you that you've inserted a full megabyte of RAM. For some reason though the start-up self-testing reports 832KB — and MS-DOS will use only 768K of it. There doesn't seem any way of persuading MS-DOS to access more RAM, and so you may be able to economise on chips by fitting only 24 of them; but we don't know *which* 24 to replace.

Q. SuperWriter on Portable

How can I get the cursor to flash when using SuperWriter on a Portable? I often lose track of it when scrolling through documents. And screen corruption occurs on my (colour) monitor if I inadvertently try to scroll down when at the end of a document — and even sometimes within text when I use CONTROL-C. Any solutions?

A. The answer (the *only* answer, as far as we know) is Ansible's FLASH.COM utility from the ANSIBLEPATCH disk (available from DEALS FOR READERS at £25).

Q. Screen dumping on F1

I am keen on being able to dump screen displays from my F1 (with ROM BIOS 3.1) to an Epson FX-80. Sadly the only company that appeared to offer a reasonably-priced solution, Praxis Business Systems' SCREENPRINT, is no longer in business. Is there any way of performing a screen dump from SuperCalc 3, ACTIVITY SKETCH and GWBASIC? A letter in *Computer Shopper* suggested buying the GEM Collection on the grounds that GEM software is generic and so would run on the F1 — is that feasible?

A. Actually, Praxis has resurfaced — though SCREENPRINT is not a current product, as far as we know. In this case we wouldn't bother with GEM: the Black Hole SCRNCOPY from DEALS FOR READERS disk AP028 should work, though we only tried it with GWBASIC on an F10 ...

Q. SuperWriter with Juki

We are using SuperWriter with a Juki 6100 daisywheel printer. We have set it up using DRAFT, but it won't do proportional spacing. Would the Ansible SuperWriter Disk help?

A. SuperWriter won't do proportional spacing at all if a DRAFT printer configuration is installed — you must ask for one of the named printers available. These don't include the Juki 6100, but experimenting with different options from the offerings listed might provide something that's close enough (Diablo? Qume?). SW.DEF with SuperWriter 1.03 gives more choices than INSW.COM and SuperWriter D1.09, by the way.

As for the Ansible disk — well, it's truly wonderful and all serious SuperWriter users ought to have it anyhow. But sadly it won't be of specific help in this problem.

Q. PC-286 problems

I have recently had my Xi upgraded to PC-286 status, and that leaves me with two problems.

- **I am using the Smart system, which is fine until I try to allocate part of memory as a RAMdisk — the machine locks up. I assume that Smart and the RAMdisk are trying to use the same memory, because when I restrict Smart to 640KB the problem goes away. I don't want a RAMdisk of 360K, and I feel I am wasting a chunk of memory that I could otherwise be using before the machine starts paging on to the disk (which tends to slow things down). Smart says it's an Apricot problem, Apricot says it can't help because Smart isn't supported. Any suggestions?**
- **The only real problem I'm having with the keyboard is that I forget to keep hitting the NUMLOCK key. Is there any way I can turn this on automatically from a CONFIG.SYS or AUTOEXEC file at boot-up?**

A. We don't have any suggestions on the first problem — any and all contributions from readers would be welcome. As for the NUMLOCK one, David Langford has come up with a tiny COM file solution. The answer is to turn on bit 5 of the byte at address 417 hex in the zero segment. The DEBUG assembler codes should be ...

```
XOR AX,AX
MOV ES,AX
ES:
OR BYTE PTR[417], 20
INT 20
```

Q. Form feed returns

I have been using my Apricot Xi10 with BIOS 2.7 copied to the hard disk from Ansible's ACOLYTE self-booting disk; this does away with the funny business of first making the printer throw out a sheet of paper before printing anything when the PRINT key is pressed. I have now updated to BIOS 3.1, and the print key again acts as a 'paper ejector'. Will some kindly soul please explain in very simple language to someone who has never summoned up the courage how DEBUG can be used to rectify this problem? And possibly how to avoid having to use the Shift key with PRINT?

A. Check your back issues for *Disinformation* columns — try the one in APRICOT FILE Release 3.6 for starters. The PRINT key may be configured with any of Apricot's keyboard editors (ACTIVITY and KEYEDIT). To stop the page eject, you can either patch the BIOS yourself (check the code starting at 1F1B hex) or get Jost Riedel's ready-fixed version of BIOS 3.1.2 (this will eject the page *after* the hardcopy has been done). ◆

Free Small Ads

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■■■ APRICOT POINT 32 NETWORK — complete system, fully maintained by Apricot. Comprises 32/10 File Server, one F2 with network card, three F1s with network cards, MS-NET software, Apricot Accountant, WordStar Professional. Total price £2,100. Call M Mansfield on 07048 31676.

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■■■ APRICOT XI 10MB hard disk, 720KB 3½in floppy, 9in monitor, MS-DOS, Basic, SuperCalc, SuperWriter, SuperPlanner. Perfect condition. Cost £3,000 — a bargain at £750. Call Brian Seaton on 0920 60224 (office) or 0992 31157 (home).

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■■■ APRICOT XI 10MB hard disk, 720KB floppy, 512KB RAM. Fitted with NEC V30 processor, 8087 maths co-processor, colour card. Complete with all manuals, GSX Programmer's and User's Guide, PC/Xi Tech Ref Manual, Service Manual. With MS-DOS 2.11, BIOS 2.7; MS-DOS 3.2, BIOS 3.1. Also Concurrent CP/M with manual and CP/M-86. Loads of software (30 DS disks). Excellent condition (home use only). Offers around £850. Phone 0679 63258, evenings and weekends. Can deliver in South-East.

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■■■ APRICOT XI FD: 512KB memory, twin 720KB 3½in drives. 12in monitor. Also SuperCalc, SuperWriter, SuperPlanner, GEM Desktop, Write, Paint, WordStar Professional, Delta 4 — £750. Call John on 01-607 9965.

Apricot Software

■■■ DBASE II for Apricot PC/Xi. Boxed, original version. Also about 50 disks of public domain software, mainly for Pascal programmers. Any offers considered; or exchange? Contact Eli on 01-341 9179 (home) or 01-589 5111 ext 5971 (work).

■■■ WORDSTAR 2000 for Xen, Xi, PC; 20 copies for sale, all unused and original with manuals and registration. £65 each. Ivan Bennett, 0902 785830 after 6pm.

■■■ DELTA 4 for Apricot — hardly used, original manuals and disks. Bargain at £195 ono. Phone 01-455 4271.

■■■ WORDSTAR PROFESSIONAL and CARDBOX PLUS, Apricot format, with manuals and master disks. Ring Henry Farrar on 0734 345211.

Apricot Hardware

■■■ ALPHA DISK 5¼in external floppy drive for Xi/PC, reads/writes IBM PC format. Also Internal MODEM, generic COMMUNIQUE, WordStar, dGRAPH, CP/M-86. Best reasonable offer for any item. Call 04675 2667.

■■■ APRICOT 12in MONITOR, padded CARRY BAG, two sets of DUST COVERS, two PRINTER CABLES. Offers? Brian Seaton, 0920 60224 (office) or 0992 31157 (home).

Other sales

■■■ DONGLE-DISK COPIER — very nice and probably quite illegal. Two 5¼in drives: original goes in top, blank formatted disk in bottom. Cost $300 last Feb. Best offer secures. David St.John-Wallis, 0428 712462.

■■■ EPSON PX8 PORTABLE with 120K RAM, WordStar, CardBox, Calc and PX Link file transfer program; also PX8-to-Apricot file transfer cable; and APRICOT VERSIONS of WordStar Professional and CardBox Plus. All with manuals and master disks. £450. Ring Henry Farrar on 0734 345211.

■■■ PSION ORGANISER Mk I with maths and finance packs, also 8K and 16K datapacks and RS-232 connection to PCs. Also some home-computer books available (Vic-20, Atari etc). Any offers considered; or exchange? Contact Eli on 01-341 9179 (home) or 01-589 5111 ext 5971 (work).

■■■ JUKI 6300 daisywheel printer with sheet and tractor feeders. About 45cps. Swapping for laser, so only £400. David St.John-Wallis, 0428 712462.

■■■ MIRACLE WS4000 MODEM and TRANSEND software, plus cables: £125. Also TV interface for Apricot F1: £10. Call John Bennett on 061-366 6382, evenings.

■■■ MODEM: Interlekt Portman with autoanswer. £50. David St.John-Wallis, 0428 712462.

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■■■ DISK RECOVERY: problems with deleted files, scrambled hard disks, and the like? We can (probably) help — no fix, no fee! Call Roger Gann at TP Group on 01-833 3501.

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■■■ HELP for PC/Xi/Xen users — setting up systems, MS-DOS, directory organisation, comms, modems. ALSO utility and business software written (in C, assembler or Basic). Call Tony Bridges, 01-948 1603 any time.

■■■ REPAIRS guaranteed. Martin Filmer Computing Services. 01-761 0425.

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■■■ SUPERWRITER BUGS CURED — twelve files identifying and curing errors in SuperWriter version 1.03 program and manual, all for a copying fee of only £5.75 (includes VAT). Call Tudor Wynn-Williams on 097 081 375.

■■■ HARDWARE AND SOFTWARE at bargain prices. Will beat any written quotation. Try us before you buy. 0382 66312 (day), 021-454 0898 (evening).

■■■ APRICOT F1 MOD — end keying uncertainty. If you can solder two wires, you can apply this simple mod. £5 for full details: W Houston, 11 Brian Close, Chelmsford, Essex CM2 9DZ.

Wants

■■■ APRICOT PC with monitor and twin 720K drives wanted — would consider an Xi. Call James Gray, 01-839 6651 (day).

■■■ APRICOT PC TECHNICAL REFERENCE MANUAL wanted. Phone Simon Protheroe, 01-836 5454 ext 2161 (office hours) or 01-263 4489 (after 6pm).

■■■ APRICOT PORTABLE wanted, 512KB. Also SOFTWARE for FP and PC. Phone 0423 521439 or write E Holgate, 18 Montpellier Parade, Harrogate, HG1 2TG.

■■■ WANTED — Keypad for F2 (even a dead one will do). Robert Clews, Flat 6 Lindsworth School, Monyhull Hall Road, Kings Norton, Birmingham B30 3QA.

■■■ WANTED — dead/damaged/cheap Xis or PCs. Phone Derek on 01-650 4900.

■■■ APRICOT XEN (non-IBM-compatible) hard disk system. Also wanted — a good C INTERPRETER (to avoid having to link after every re-edit) or Apricot CODEVIEW debugger; and a TELETEXT TUNER/READER that can be connected to Apricots (is there such a thing?). Call Tony Bridges, 01-948 1603 any time.

■■■ F10 10MB hard disk system (with manuals if possible). Contact R Noakes, 051-336 6898.

■■■ IBM-COMPATIBILITY FOR F SERIES — either a fully-effective IBM emulator or a patch permitting the IBM version of Microsoft Word 3.0 to run. Also wanted — a WORLD MAP or GLOBAL MAPPING PROGRAM. I have scores of home-grown GW-BASIC programs to sell, exchange or share — including full documentation and sample programs for the infra-red Mouse. Contact Bob Mandel, Lewis & Clark College, Box 96, Portland, OR 97219, USA.

■■■ SECONDHAND OR EX-DEMO HARD DISK — internal or external, 10 or 20MB, for PC. Cannot afford £800+ for a new one. Write to T Orekoya, FAO (FIRI), Via della Terme di Caracalla, 00100 Rome, Italy.

■■■ MMS INSTRUCTION MANUALS AND INTERFACE BOARD required for MMS hard disk unit and tape streamer. Willing to pay for help (even telephone assistance) in setting this up. Call Roy Roberts, 0923 775381 (office) or 0494 775088 (evenings).

■■■ GOOD DEBUGGER wanted for PC/Xi. I hate using Apricot's; can anyone help before I'm forced to write my own? (Preferably with symbols and/or C source display). Phone 01-948 1603 any time.

■■■ 10/20MB EXTERNAL HARD DISK required for Apricot PC with BIOS 2.4. G S Jayaram, PO Box 2642, Doha, Qatar (phone 417282 6-9pm UK time).

■■■ APRICOT PC or 10MB XI wanted; also PRINTER if available. Fair price paid, immediate cash. Phone Mrs Morrison, 0636 704208.

Contacts

■■■ F SERIES user wants to get in touch with others in the States. Contact Bob Mandel, Lewis & Clark College, Box 96, Portland, OR 97219, USA.

■■■ GOSPORT BULLETIN BOARD has an active and knowledgable Apricot section (used to run on an Xi!) with mail, PD software, lots of tips, etc. Set up for N-8-1, call 0705 552 4805 — speeds between 300 and 2400 bps.

■■■ SOUTHERN APRICOT GROUP meets near Salisbury six times a year. Information: Mike Dirom, Highover, Glasses Lane, Sutton Mandeville, Salisbury, Wilts SP3 5NB (SAE please) or call 0722 70219.

■■■ SWITZERLAND: Apricot user would like to contact others, preferably in the Zurich area, to exchange experiences and help each other with problems. Contact John Solomir, Stockenstrasse 67, 8802 Kilchberg.

■■■ PORTABLE user would like to contact another in South London to exchange information. Contact Geoff Reade, 9 Taymount Grange, London SE23 3UH.

Misc

■■■ KITCHENS: I work for a kitchen manufacturer and am able to buy kitchens heavily discounted because the packaging has been damaged — contents are perfect. Call 0484 545807 after 6pm.

■■■ HOUSE TO LET in the South of France at Agde, on the Mediterranean coast. Attractively converted 16th Century house with roof terrace: sleeps 4-5. Local British management. Phone 01-352 5925 evening. ◆

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Notebook

ESCape codes update

for PC or Xi with BIOS 3.1.2

By Jost Riedel

ESC–

The ESC– function (clear all low-intensity characters) does not work as advertised — it clears a character *only* if its attribute byte is zero. This means not only that intensity has to be off, but reverse, underline and strikethrough as well. And of course it must be in the first font, and then apply to a character with a hex code of CF or less.

There is, however, a patch. This is the original:

```
2065   CMP  AH,BL
2067   JZ   206B
2069   JMPS 205F
```

The CMP is ACT's error, for BL always contains '0'. Patch it as follows, and the result will correctly test the intensity bit — and is one byte shorter:

```
2065   TEST AH,40
2068   JNZ  205F
206A   NOP
```

But this of course does not mean that either ESC+ or ESC– are perfect by now. They both bypass the INT EC driver by manipulating the screen directly. This means the ASCII image (a copy of the physical screen that INT EC maintains) still has its old contents, and functions relying on INT EC will produce wrong results — for instance, a hardcopy will show the contents of the screen without erasure.

And with the original Apricot version of BIOS 3.1.2 — one that does not have the 'screen access optimisation' feature patched out by me — parts of the screen may appear to be locked; INT EC thinks you want to write a character that is already present on screen as it does not know what had been cleared by ESC+ or ESC–.

But the collection of Turbo Pascal routines below will provides a truly compatible solution — for BIOS 3.x only, sorry — that even works on the F Series. (It is an improved version of what you got together with PCFX.GSX some time ago.)

The method is to modify the ASCII image and then bang this to the physical screen using an INT FC call. Things are slightly more complex with a Portable as there are *two* different ASCII images and you have first to determine which one is the current one (LCD or external monitor).

ESC 7

In addition to the documented arguments — 0 to 3 — for the ESC 7 function (set screen environment) the following synonyms are available:

4 = 1
5 = 1
F = 2
A = 0
L = 0
B = 0
I = 4
K = 5 (which equals 1 in return)

The letters may also appear in lower case.

ESC x* and ESC x&

Both of these set the CNF_HERTZ flag of the current configuration to 1. You can check this with an elderly version of LABELSEC (like version 3.00). They should do some useful things on F series machines with old ROMs (they are documented in pre-BIOS 3.x manuals).

```
var
  ScreenImage :   ^array [1..2000] of integer
                  absolute $0000:$0726;     (* BIOS 3.1 *)
procedure UpdateScreen; (* writes ScreenImage^ to the active screen *)
var reg : register;
begin
  reg.bx := $31;
  reg.cx := $0f;
  intr ($fc, reg);
end;
procedure ClrNorm;
 var i : integer;
 begin
   for i := 1 to 2000 do
      if (ScreenImage^ [i] and $4000) > 0 then ScreenImage^ [i] := $0020;
   UpdateScreen;
 end;
procedure ClrLow;
 var i : integer;
 begin
   for i := 1 to 2000 do
      if (ScreenImage^ [i] and $4000) = 0 then ScreenImage^ [i] := $0020;
   UpdateScreen;
 end;
```

Both set this flag, but according to the documentation the asterisk switches to 60Hz and the ampersand to 50Hz — so this code is not only superfluous but bug-ridden as well. I have not patched this one.

ESC xE and ESC yE

These control the LCD screen contrast on the Portable; on other machines they should be NOPs. With BIOS 3.1.2, however, they step the bell volume (same as ESC xF and ESC yF). I don't think this hurts much; but it's easy to patch so I may do it when there is nothing better to do.

ESC { and ESC |

These are not exactly NOPs, but they respectively set and reset the CNF_IMAGE_OFF flag in the current configuration. Again, this may be verified using LABELSEC. As this flag is not applicable with later models (and of unknown action with earlier ones), they may, however, safely treated as NOPs.

ESC = and ESC >

These are definitely not NOPs. ESC = has a number of effects:

- it modifies the delete-line function (ESC M) so it will now perform like a reverse linefeed (ESC I)
- it turns off wrapping at end-of-line
- if the MicroScreen is not echoed to, it makes the ESC (and ESC) take one more character as a parameter (which is ignored).

ESC > will restore sanity — but it sets ESC (and ESC) only to normal length if the MicroScreen is still inactive). It seems that this is used to emulate a terminal that is slightly different from a standard VT52, but I have not the slightest idea which one.

Metaphysical ESCs

Then there are two non-existing ESCape codes: they are neither documented nor implemented. They are, however, present as code that will never be executed (dead code) within BIOS 3.1.2.

One will save the character and attribute byte at the current cursor location; the other writes the stored character (with attributes) to the current cursor position. ESC z resets the saved character to a NUL with all attributes off. This could be used for copying portions of the screen or a do-it-your-self blinking cursor; but it's dead, and I don't have any idea which unused ESC code programmers at ACT reserved for these, so maybe I'll leave them as zombies for ever.

Other notes: multiple hard disks

There is an Xi controller (engineering revision #9) that is said to be able to drive two hard disks, each with up to 40MB; that was done so there could be an Xi80 one day. From my wanderings inside the BIOS I learned that the BIOS is supposed to drive up to two floppies and four Winchesters using two controller cards. And a few years ago I did see a German upgraded Apricot Xi with twin floppies plus a 20MB hard disk that booted from the hard disk.

What's more, the BIOS seems to support *any* size of hard disk as long as it does not have more than eight heads and an ST506 interface. Unfortunately both the factory formatter (TES004) and FORMAT (version 1.5.3) seem to support only 5, 10 and 20MB Winchesters. Are there later versions?

Centronics control

Re. the *Q&A Clinic* in APRICOT FILE Release 3.7 on printers: it is widely known that printers like a humble Epson FX-80 or the NEC P6 suffer from some communication problem with an Apricot PC or Xi — it's even documented in Epson's FX-85 handbook.

The line in question is on pin 14. It's called AUTO FEED XT; and with this signal at LOW, the paper is automatically fed one line after printing. The signal level can be fixed to LOW by DIP SW 2-4. But it can't be fixed to HIGH. So either your machine handles pin 14 correctly (via software control, ideally) or you get an extra line feed. But Apricot's designers decided to *ground* pin 14, which ranks with the touch-sensitive keys as one of the greatest of their hardware design errors (there were a few). And it's the silliest one for sure.

I don't think I even understand what this status line storing and printing actually refers to. I have two NEC P6s under my supervision, and both work just fine with pin 14 cut off.

There is a Control Device call (DEV=35H, CMD=5), unsupported by either SETUP or (yawn) ACTIVITY, which I once believed would cope with this problem; but it just lets you choose between one or two unwanted extra blank lines.

Interim solution updated

Regarding the Simon Potter/Terence Green piece on the future for Apricots, there are two more choices left unmentioned:

5. Stop computing and do something else to have your fun, like cattle farming in Paraguay or chasing beautiful bodies in discos (in fact one of these is the cause of my long silence, but I won't disclose which one).
6. Stop looking for Intel-style computers. The fact that IBM has usurped this scene now means that it is stagnating; IBM-compatibility means hardware-dependency — just look how long it took for OS/2 to appear, for 'compatibility' reasons. Instead, get a sexy machine: an Atari might do (your Apricot should in theory be able to read Atari disks, and the Atari should read /I-formatted Apricot platters), but an Acorn Archimedes sounds weird and exotic enough to become my next true love (as far as computers are concerned). ◆

Doodles by David

Tips and Tricks

The occasionally essential column

By David St.John Wallis

Don't blame me if you didn't see this column last month. Some chaps warn other chaps when they're changing from Telecom Gold to MicroLink. Consequently V1.0 of this column is now forever buried in 81:JET767, an APRICOT FILE mailbox which will be accessed by no-one ever again. For your ID list: APRICOT FILE is now on 72:MAG068 and I'm on 72:MAG96169. (Knowledgeable e-mailphiles up Kings Cross way thought of *asking* for a low number!)

The Directory Tip

If you have MS-DOS 3.2 you can use SUBST.EXE like so:

```
SUBST D: C:\DATA
SUBST F: C:\PROGRAMS
SUBST E: C:\TOOLS
TYPE SUB.V1
```

SUB.V1 is just a little text file which reminds you that the subdirectory data can now be called D. The advantage of this little routine is that you can access subdirectories from programs which do not like subdirectories because SUBST fools DOS into thinking you've plugged in some more drives.

The MicroScreen Tip

And if you have a program called MS.EXE, you can mess about with your MicroScreen. You might have a batch file which looks like this:

```
ECHO OFF
CLS
ECHO  Initialising the MicroScreen now baby!
"
ECHO  That's Cache in there now
"
ECHO  Now Metro
"
ECHO  And now PC Tools
"
ECHO  And that's Tornado Notes
"
ECHO  And here comes SmartKey
"
ECHO  And last comes Pop.
ECHO ON
CLS
```

The text after the MS number appears on the MicroScreen. The second set of double quoted text calls the programs. I use this for calling memory resident programs. CACHE is MicroCache which worked straight out of the Xi20 winchester on my AT clone — there are lot of other cachers, but this one caches writes to floppies too. METRO is Lotus' wonderful desk accessory kit, better by far than WordPerfect's Library or Executive neither of which have a List Manager; PCTOOLS is a sort of clever DOS enhancer, now overtaken by PCTOOLS PLUS which has a little debugger in it even I can understand. TORNADO NOTES is a kind of electronic back-of-envelope. SMARTKEY lets you reconfigure keys quickly and easily even from within programs. POP is the latest version of brill D.Tebbutt's BRAINSTORM, now memory-resident and ever so cheap (call David on **0895 677845** and marvel at the wisdom or buy his program).

I got into a great snare and delusion over this batch file to begin with because it wouldn't work while I was trying out DESQVIEW, which itself has a file called MS.EXE which reads memory usage. Solution: rename one of the files.

Another idea: when installing new programs on to a Winchester, use something like CHMOD *.EXE/R to write-protect files which might get overwritten.

Incidentally, Dave Tebbutt tells me there is a memory-resident disabler called MARK and RELEASE, which is better and is now in the public domain. You MARK your pop-ups when loading them, so that you can RELEASE them later. All orders will be treated with sympathy.

The Date Tip

There's a utility called FILEDATE which simply writes the date to disk. You can use it usefully in a batch file to call a word processor which doesn't have a date displayer. Here's one for SuperWriter:

```
C:
CD\PROGRAMS
FILEDATE
REN DATE D
COPY D \DATA
DEL D
SW %1
```

The first two lines simply get you into the subdirectory where FILEDATE and Superwriter live. To save cluttering the subdirectory, FILEDATE's output is renamed and pumped over to the DATA directory. SW.DEF contains a line which says DDISK D:, so the program defaults to the DATA subdirectory when it's loaded.

To load the date into a SuperWriter document you go ESC i d [Return]. Or if you have set up SmartKey you can press CTRL D. Then you get something like 'Thursday 12th May 1988' at the cursor position.

The Intermittent Printer Problem

There's not much worse than something which only goes wrong whenever the engineer is somewhere else.

My problem was a printer which would output the first page of some text correctly but then shunted the margin over into the middle of the page somewhere. Everything was tried: the printer cable was changed. The DIP switches were messed around with. MODE.EXE was used. Three computer motherboards later I called the famed Micro Peripherals. Sounds like a time-out problem, quoth they. The trouble is the printer behaved perfectly well with any other computer.

In desperation one day I packed up the computer, screen keyboard cables and printer. Off to Power Micros of Basing (telephone **0256 843477** and speak to Ross or Billy) who are Apricot Dealers and Jolly Nice Chaps. They tested everything exhaustively and used up miles of printer ribbon. Could they find a problem? No they couldn't. All tickety-boo, they said. And they didn't charge me.

Much much later, it occurred that something was wrong with my environment. But what? Well, it turned out that my combination of kit is susceptible to 60 watts' worth of Malcolm Messiter's superb *Oboe Fantasia* blasting away just under the CPU. Disconnection of the speaker produced connection of printer. Withering scorn was the mildest of reactions from sundry grey folk in Demuth Way.

Wireless phones have even more devastating effects, one hears — one chap regularly blows up his friend's Winchesters by leaving his superyuppy Cellphone parked next to a CPU.

There is another theory about all this — a bug in MS-DOS 3.2. IO.SYS version 3.20.0 dated 1986 is the naughty file. Shrewd Bill of Power Micros fame opines that an update in 1987 is a year later.

The PX adapter

A chap who installs Apricot's wonderful PX adapter into his clone so that he can run little Apricot cards *au* IBM is in for a shock if he was previously humping paving slabs. A deftness of touch akin to that of a teetotal non-smoking neurosurgeon is needed, nay vital, if the inadvertent decapitation of awesome and tiny pins which you can't see is to be avoided.

My tip: don't bother with the PX adapter and save £50. My Xi20 cards didn't work in a Xen-i anyway; and the smashing 512KB memory cards are too slow to handle 10MHz as well.

Anyone want a PX adapter? Only 45 quid not a million miles from this full stop. And you get to enjoy a cool glass of Wincarnis to boot. Come to think of it I've still got a computer to sell as well, and a couple of printers. First serious offers will not be greeted with derision.

Columns

A variously enormous deal of fuss is made by programmers and by punters about the dreadful column formatting in WordPerfect. There is a jolly easy way to do columns, for scripts, or pretend newspaper columns or whatever, if you have Lotus 1-2-3. What you do is use the **Range Justify** command:

1. Import the text into 1-2-3.
2. Set the A and C columns to a column width of 22 and the B column to 2. Use **\RJ** from cell A1 and Return. All the text will be in cells A1 onwards, and column A has been set to 20 so the program will reformat everything to a width of 20.
3. Use the cursor to go to the end of column A and note which line number it's on.
4. Then Move from halfway down Column A to C2.

You can then do a Print to File command and load the stuff back into SuperWriter for spelling checks and so forth.

Profits

I get these Apricot price lists, unsolicited and regularly. They bellow 'Strictly Confidential' and 'Trade Use Only'. They make fascinating reading, particularly if you bung them on a spreadsheet and work out the various profit margins. So they're probably copyright. And so here goes ...

Computer	Trade	Punter	Profit
Xen-i Tower 50MB	£2,729	£3,999	£1,270
Xen-i 386 30MB	£2,183	£3,199	£1,016
Xen-HD 20MB	£1,842	£2,699	£857
Xen-i 286 45MB	£1,706	£2,499	£793

One cannot help but wonder what extra support one gets from the dealer on the sale of the Tower model versus the 286. Come to think of it, one wonders what support one gets at all from the dealer to justify that 46 per cent. At least chaps flogging cars get to wipe the wax off the bumper. Anyway, anyone who wants an Apricot need look no further than this full stop provided he's ready to haggle about what support he won't get from me. But come to think of it, the distributors probably won't sell to me after this item. ◆

User Experience

The Great Laser Printer Con

Of Apricots, lasers, and wallets

By Eddie Bromhead

There's no such thing as a free lunch, a reliable Lotus, or a cheap laser printer.

This homily is the result of three bad experiences, the last of which (the subject of this article) was a search for a best buy in laser printers, and some experience in trying to get good quality output for a simple report (actually a user manual for a computer program).

On the other hand, the day of the sub-£1,000 laser printer dawns. Should we all rush out and buy one? There are some things the potential buyer needs to know before making the investment. Just like buying your first Apricot, and then discovering just how many extras you need, buying the laser printer hardware is potentially only the first step down an expensive path ...

Dot matrix printers come in two sorts, Epson-compatible and others (now very much the minority). Laser printers also have two flavours: HP-compatible (meaning compatible with the Hewlett Packard LaserJet — but there are at least two LaserJet models to be compatible with!) and POSTSCRIPT-compatible, being those which have the POSTSCRIPT language embedded in their make-up.

HP-compatibles

POSTSCRIPT printers normally come in at about three times the price of the others when all discounts are taken into account. In the beginning, therefore, just think about the HP-compatibles.

Unlike the plotter market, where HP plotters are still at least twice as expensive as compatible clones, HP lasers are competitively priced. £1,500 will get you a Series 2 LaserJet, and there's very few offerings that are substantially cheaper — maybe the Epson GQ3500 saves you a couple of hundred quid, or you'll find some printers offered with big 'end-of-line' discounts *(you can find the now-replaced Centronics PP8 for less than £1,000, but it's not HP-compatible — Ed).*

But beware of overexcitement. All you get for your money is a printer that handles 10 cpi monospaced Courier and a 15 cpi compressed font, printing at around the speed of a £300 Juki daisywheel but at ten times the cost per copy.

Ok, so the laser printer is practically inaudible: and you do get a year's free on-site maintenance with some of them. But for the £1200 difference you could buy an acoustic hood *and* three replacement machines, together with any number of printwheels and a lifetime's supply of ribbons! The laser printer manufacturers don't tell you that in the large print ...

Software

The next problem is in getting software to drive it. There aren't many laser printers in SuperWriter's installation list, and the escape sequences available in (say) WordStar aren't long enough. In looking round for something I already had that might drive a laser printer, I turned to WINDOWS WRITE on my Xen. It was quite happy giving me different character heights, weights, italics and all on my ACT Writer 10 (that's the C Itoh 8510 with a fancy badge). A broadly similar result appeared when I tried it on an Epson. WINDOWS drives dot matrix printers in bit-image graphics mode even for text. Beautiful — well, it would be if the dot size were smaller, just like you'd expect from a laser printer. (GEM WRITE only handles a single character size)

So I installed the HP Laserjet Plus on a Xen at the Poly and connected up the printer (I no longer buy before I try!), expecting to print out my document with the some sort of improvement. There wasn't any. My nicely-formatted document dropped straight back into Courier, both on screen and in the output. WINDOWS doesn't drive laser printers in bit-image mode except in graphics applications, or so I found out after I had trooped off to my PC/S-286 for the later driver (the one with the Aldus copyright notice). No improvement was promised unless I installed a font cartridge *and* told WINDOWS which one it was (only one, despite the HP LaserJet having two slots) — there are no fancy fonts. I subsequently found the same applies with WordPerfect and MS-WORD — and indeed with everything I could lay my hands on, or read up about.

Now if you are following the same quest, this is the first time (but not the last) that you'll part with extra cash in the search for the sort of output that 300 dpi ought to be able to produce. The font cartridges cost about £150 a throw. Once you've got a font cartridge installed, you have proportional spacing, medium and bold, and probably italics too — but wait a minute, where are all the big characters for headings and the like? Not on any cartridge. The cartridges contain ROMs filled with the character bit maps. Naturally, the ROMs are small, just like the standard ROMs in the printer: so there just isn't enough room for big bit maps.

To get big characters, you need downloadable fonts. Well fine, get some. About £100 for each disk. But you find you don't have enough memory in the printer actually to download them, and a RAM card to push a LaserJet from 512KB to 4MB is a whacking £1,500 — just doubling the price you

originally paid. Less RAM is a false economy, because those downloaded fonts are really big.

Next, you discover that none of the software you have handles the bigger sizes — which are accessed via escape sequences of such length and complexity that they are bound to defeat the installation procedures of almost anything you are likely to find in your software library — let alone the average PhD's brain. WINDOWS WRITE doesn't know anything about download fonts either.

PostScript-compatibles

Now to the POSTSCRIPT printers. These already come with the extra RAM, and the fonts are all built into ROM. There's one drawback — the characters are basically stored as a set of straight lines and curves, and the characters are generated as required. This has to be slower than a simple bit-block transfer each time; and unfortunately, it gives slightly poorer results in the smaller character sizes.

Having costed it out, the POSTSCRIPT-compatible printer costs the same as a LaserJet with all the hardware add-ons. So it is a better buy in the long run. What's more, it *can* be driven by Apricot WINDOWS software such as WINDOWS WRITE.

In short — to get the best out of an enhanced HP-type laser printer, you need the right extra software: you may not need it with a POSTSCRIPT printer. That extra software is Desk Top Publishing (DTP) software.

Ventura Publisher

Yes, you *can* run Ventura Publisher on an Apricot ... but only if it is an IBM-compatible Apricot. Ventura is a sort of GEM application, but uses a bastardised GEM with elements of GEM 1 and GEM 2 together with (I suspect) IBM BIOS calls.

Unfortunately, Apricot GEM doesn't co-exist with the IBM emulator. Actually, I have a suspicion that Ventura uses one of Apricot's private interrupts as an overlay interrupt (a means of signalling to an underlying part of the program that it needs to load another routine from disk). Try it if you like: Ventura is about as easy a way to hang up a computer as any I've come up against. Even on an IBM-compatible, it's no great shakes — I got it to hang up 40 times in an afternoon, finally turning the CMOS bad so that the dear old thing forgot it had a Winchester. In my younger days, I might have got sufficiently excited by this to kick the machine round the room!

Ventura on the Apricot

Something in Ventura hangs up an Apricot — a BIOS call, direct screen RAM addressing, accessing a feature of its specific GEM version, or using an interrupt to trigger the loading of an overlay when the same interrupt is used for something else on the Apricot. Whatever it is, in all probability Ventura will never be available for us users of old-style Apricots and Xens.

That's a shame, because a Xen is an ideal Ventura engine. The extra RAM in a Xen would mean that Ventura might be able to handle a 300-page book as one document!

But even if you can't run Ventura on your own Apricot, you *can* prepare files on it for final polishing on an IBM-compatible.

When you produce a Ventura 'Publication', you end up with a 'Chapter' file (.CHP). It isn't an ASCII text file. In it are the references to all the text and picture files you have invoked, together with a note of which 'style' file (.STY) you have used to format the text. The style file contains the information on the paragraph tags you have used, and it isn't an ASCII text file either.

Ventura's strength lies in these paragraph tags. For instance you might set indents, line spacing, large initial letter, font, rules above and below the paragraph, and so on as a tag. Then, under Ventura, all you need to do is to highlight a paragraph and 'tag' it with a particular paragraph style; and it's automatically formatted according to the rules which apply to that tag. Each 'tag' is given a name when it is created.

Suppose you prepared your text with WordStar and your pictures with GEM PAINT/DRAW. After importing them all to Ventura, you'd find that your WordStar text file had been subtly modified — but your picture files would be as you created them. If you know the rules for modifying your WordStar file, and do so prior to importing it into a Ventura Chapter, it appears properly tagged and hence properly formatted. This much you *can* do on an Apricot.

Paragraph tagging is easy: simply prefix the first character in the paragraph with its tag name. For example, your tag might be 'Roman Caption' to Times Roman 10pt, justified, with no indent for the starting character. A paragraph commencing "Then the paragraph starts ..." could then appears prefixed by ...

```
@Roman Caption = Then the paragraph starts ...
```

Ventura recognises ^P commands for boldfacing, underline, super and subscript; and it has its own toggles for character style. For instance, bracketing some text with <F1M> and <F255D> switches to Courier then back again:

```
<F1M>This much is in Courier<F255D>
```

The rules for this (and much more) are given in *Inside Xerox Ventura Publisher* by James Cavuoto and Jesse Berst.

Finally, text flows best into Ventura if it is created (or at least reformatted) without on-screen justification and hyphenation. Those features are best done by Ventura itself.

The documentation that comes with Ventura is awful. If that's DTP, you shove it.

By contrast, the *good* feature of Ventura is its fonts. Only 'Swiss' and 'Dutch' (Helvetica and Times Roman to you and me), together with Courier (well there would be, wouldn't there?) and Greek letters (at 10pt only, on a LaserJet, and not in all combinations of weight and slant in the range of sizes which go up to 24pt maximum — but beautiful when printed out at 300 dpi).

All that without a font cartridge or downloadable font in sight, and with only 512KB of RAM on board ... though it crashes if you try to put 24pt Helvetica *and* Times on the same page. Basically, Ventura downloads its fonts to the LaserJet at print time; so extra RAM is a desirable optional extra.

The new version of Ventura is even better, if such a thing is possible.

PageMaker

PAGEMAKER runs with generic Apricots! You probably need a Xen, although WINDOWS does run on a PC/Xi — a hard disk is pretty much vital though, and single-sided floppies *definitely* can't cope.

Points to watch include the way the INSTALL program expects drive C to be the hard disk. So you can't load up the IBM emulator first to run it (which would otherwise be a good idea) — well, not unless your hard disk is external, or you have a second Winchester in a Xen thus giving you a drive C with enough space on it. Instead, PAGEMAKER must be installed by hand.

Ideally you'll have WINDOWS 1.03: and Xens were shipped with 1.02. Does this matter in the same way that it does with GEM? Not to such a great extent — although the manual does suggest that to operate kerning properly 1.03 is *de rigeur*.

Anyway, it does get up and running on a Xen. Great. Now how about the results? Sadly, they're rubbish. PAGEMAKER uses generic WINDOWS fonts designed for plotters or dot matrix printers if you don't have downloadable fonts; and once you've seen what 300 dpi characters can really look like, you won't be happy. Once again, with downloadable fonts you have to buy them in the first instance — and the printer RAM to go with them.

PAGEMAKER's documentation is wonderful. Not only is the design superb, but the information is complete and accessible. It is the best tutorial to WINDOWS I have ever seen, and explains what the various files in the WINDOWS system actually do.

What to buy?

By the time you've bought a copy of either of these packages, you will be a lot poorer — and not a lot closer to your goal.

On the other hand, buying a POSTSCRIPT printer gets you a megabyte of ROM, 11 fonts from really tiny to 48pt with all the special effects, and 1.5 to 2MB of RAM as standard. Lay pages out like the galleys that a typesetter produces for you, using WINDOWS WRITE, and lay them up by hand, and you'll save time *and* money. Skip Ventura or PAGEMAKER, by the way! On the other hand, if you do have the facility to operate either of these DTP products, a POSTSCRIPT printer still gives you more.

I reckon a POSTSCRIPT laser is about £500 to £1,000 cheaper in the long run.

Last word

But now you come to the final con. Such and such a printer produces 6 or 8 or 10 pages a minute. Well, maybe it hits that rate with text only and printing in Courier. Maybe it's relatively faster on long print runs, with multiple copies of each page. But it can sometimes take 10 minutes to produce the first page, and often very long waits are the order of the day when graphics is involved!

Actually, that was the penultimate con. There's another hiding in the Ventura pack. It gives some standard pictures in GEM PAINT and DRAW formats. They weren't produced by those packages: the files are actually too big for GEM PAINT and DRAW to handle, and were produced by some other application before being converted to GEM format! ◆

Tricks with WINDOWS

LaserJet-emulating printers can be made to do larger character sizes for headings by preparing them with WINDOWS PAINT and transferring them to the WRITE document via cut-and-paste. It helps if you scale down the graphic, for then its jaggedness shows less.

Using this technique, white letters on a black or half-tone background can be obtained. This can be effective even with the default Courier as the small letter type, though it works better if your small characters come from a font cartridge. The same goes for PAGEMAKER if you're that rich ...

Some printers have built-in Epson emulation (the Brother HL8, for instance). In this case, tell WINDOWS you have an Epson and not a LaserJet to get what I described above as being unobtainable.

Many thanks for your contributions to the Great Ormond Street Wishing Well Appeal — we had around 70 guesses and donations, a total of £147.50 which APRICOT FILE has matched (a bit better than matched, actually). Terence Green, fresh out of hospital and newly replumbed, writes:

Well, the Bad Taste Appeal has now come to an end. I was astounded by the precision with which some entrants completed their guesses; unfortunately the Path Lab at Great Ormond Street took an integer-based view. So step forward, **P.F.Gregson**, who correctly thought my colon would be 98cm in length — your choice of disks awaits.

This doesn't mean you can't continue to make donations to the Wishing Well Appeal; the work of the Children's Hospital is renowned throughout the world, and it is *vital* to parents whose children are referred to GOSH from across the UK — the world, even.

And, yes, despite the light-hearted way I've treated this matter, it was a serious operation, and I'm relieved as hell that all went well — due in no small part to the NHS in general and the surgeon in particular. Thanks, Mac.

The tradition continues. In some areas, 90 per cent of the NHS's specialist equipment is purchased with charitable funds. But this is not enough. As a user of the service, I know that it is in no way a political statement to say that here is a problem which needs public money thrown at it, for the future benefit of all.

Thanks to all who contributed.

Our thanks too. It's nice to know that we can number such people among the Apricot-using fraternity.

Quality at British Telecom?

The **Telecommunications Managers' Association** has just published the results of its 1987 survey on British Telecom's quality of service. The survey suggests there has been little improvement; though the TMA comprises the country's largest users, a third did not receive replies to calls to BT and 30 per cent hadn't had a courtesy visit. Fully 28 per cent of respondent said reported faults were "never rectified".

Bargain modems — prices

Last month we mentioned **Larry Fulcher** and his bargain-priced fully-guaranteed Miracle Technology modems (he bought up stocks of out-of-production models). He's now sent us his price list, and here are the highlights:

WS2000 V21/V23:	£48	RRP £125.00
WS4000 V21/V23:	£88	RRP £195.44
WS3000 V21/V23:	£98	RRP £339.25
WS3000 V22:	£148	RRP £569.25
WS3000 V22 bis:	£198	RRP £339.25

Larry's prices include P&P and he's not VAT-registered; the RRP (which doesn't include despatch) is Miracle's VAT-included price for current models, which are technically and functionally the same units in different packaging.

The WS2000 is a simple manual modem (you dial the number yourself on a connected phone, switch the modem to 'on-line' when you get the carrier tone); the others are all autodial autoanswer modems that can be driven by software — like the TRANSEND package sold by our DEALS FOR READERS service at £57.50. The V21 speed is 300 bps, V23 is the split 1200/75 bps rate, V22 is 1200 bps, V22 *bis* is 2400 bps. You might need an Apricot cable, too, and DEALS FOR READERS can do that as well.

Larry Fulcher also has bargain prices on the IBM-compatible WS3000 KeyCard (internal modem — doesn't fit the Xen-i, though) and the C64 MultiModem (for Commodore 64s). He's on **0473 87539**.

First erasable CD

According to the industry newsletter *Newsbytes*, we're about to enter a new world of mass storage — a San Jose company called **Maxtor** should beat Tandy to market with the first *erasable* optical disk drive this autumn.

Optical disks (*aka* laser disks) are currently available primarily as CD-ROM (pre-recorded data, no rewriting) or WORM drives (disk arrives blank, you can write on to it once only and read as often as you like). But complete read-write flexibility, as provided by erasable media, will greatly enhance the technology's appeal for mass backups. What's more, Maxtor's TAHITI I drive — to be sold to OEMs (and not end-users) for around $2,500 — will store a gigabyte of data on removable 5¼in disks with an access time of only 30ms. That's much faster than existing optical disks and compares well with conventional magnetic-recording hard disks. A slower 3½in version called the FIJI I will also be available — stores 160MB, access time 100ms, price "less than $1,000".

Deals For Readers extra

In response to several requests, we've been looking for some time now for a decent tape streamer that will work with Apricot-format Xens and Xis. We think the **DataWarden** from Simon Computers will fit the bill: it's British-designed and made, uses quarter-inch 3M data cartridges, backs up at an average of 2MB per minute, claims "superb" reliability, and uses its own error-correction code. The price includes a controller card, mains lead, all the cables, and backup/restore software. It can also be driven from a second controller on a second machine — IBM PC/AT or Apricot, so the DataWarden can act as a file transfer device and/or provide backup safety for another machine.

The price isn't fabulous, but it's the best we can do — **£1,000** to include VAT and despatch. Order as DEALS FOR READERS number **AH030** for Apricot Xi, **AH031** for Xen; a second controller and backup/restore software in the appropriate format is **£200** — order as **AH032** for Xi, **AH033** for Xen, **AH034** for IBM-compatibles.

Recommended maintenance

Another maintenance firm interested in Apricots has been recommended to us: **A&D Electronics** used to do Apricot extras like boards and still has some in-house Apricot expertise. The address is Unit 1, Wayside, Commerce Way, Lancing, West Sussex; the phone number is **0903 763940.**

Bye-bye Compec

Compec, one of the first UK computer shows, has been showing its age of late; so it's no surprise that organiser **Cahners Exhibitions** has killed it off, citing a deficiency of exhibitors. Can't say we're sorry — Compec began life with a peripherals orientation, metamorphosed into an exhibition for the DP/MIS world, and for the last few years has been looking more and more schizophrenic as it searched for a rôle among bigger and better-defined shows. Of late it has been pretty boring for visitors and exhibitors alike.

Take it away

The weekly magazine *Computing* reports that the government has agreed to an urgent request from HM Customs & Excise and the DTI that export licences should no longer be required for computers with up to 4MB memory, providing the machines are in transit to a "friendly" state. That's good news for travellers — we've know the experience of turning up at the airport unaware that our well-used machine needed an export licence as well as disk head locking blank.

Here we go again

Some readers of *PC Week* for 3 May may have felt a touch of *déja vu* when reading a plaintive letter from Salford University's Computer Centre.

It seems the University had a problem with its Xen-i 386, phoned Apricot's tech support department, and was told to write. After "several months" of waiting, a follow-up elicited the information that Apricot "had never received" the letter. This time Apricot said it *had* received the letter and was following it up. No response. Eventually Salford University came across a press reference to bugs in the 80386/80387 interface, which could have caused one of the problems; Apricot denied all knowledge of the bug, then sent a replacement board to fix it. It didn't. Subsequently the correct bug-fix turned up, but it made no difference. Appeals to Roger Foster produced a polite "the matter is being investigated" letter followed by silence. Meanwhile the University decided to buy a copy of the diagnostics — for which it was charged "an exorbitant £200" for a pair of disks with handwritten labels and no documentation.

Finally Apricot took a copy of the software, duplicated the problem, and sent a new boot ROM "with suitable fixes". It didn't work. A second ROM did work, but didn't resolve the problems ... David Bailey, author of the letter, concluded by complimenting the machine as "a nice piece of engineering". *Plus ça change ...*

More Mercury

Mercury Communications, reportedly on the verge of a Stock Exchange listing apart from its parent Cable & Wireless, is pushing hard for business with a big media campaign "raise the public consciousness". It also launched the **Mercury 2700** voice mail system at the *Communications 88* exhibition earlier this month; as with BT's fledgling VOICEBANK system, the service works rather like electronic mail — except that messages are spoken rather than read. And there are links to voice mail services in the States and Japan. Details from **01-528 2000.**

Second Data Act prosecution

The second prosecution under the Data Protection Act looks like another case of *pour encourager les autres* — it's another garage, a Ford dealer in Basildon (last December a Bedford car dealer was fined £500). The Data Protection Registrar says another 18 prosecutions are pending.

Microsoft expands in Ireland

In the States **Microsoft** has consolidated its production and distribution into one giant $14 million plant that can churn out 250,000 packages a month right now and has the capacity for a million. For Europe, Microsoft plans a $2.9 million software development center in **Dublin**; the Irish Development Authority is going great guns at the moment — seven other big US computer-industry firms have agreed to invest heavily in Ireland, including Ashton-Tate, Logitech, and the Apple spin-off Claris.

Fast-branching batch files

Ted Webber dropped us a note from Papua New Guinea with a couple of points on his fast-branching BAT file tip published in *Readers' Writes*, APRICOT FILE Release 3.7; the escape code in line 2, which ECHOs the demo title, should of course start with ^[E (ESC E) and not ^E (CONTROL-E). And for reasons of space we omitted his note about the last two lines of his example, where he tried to branch to a non-existent label (:%1). That doesn't work.

CashLink update

CashLink Software dropped us a line to confirm that Apricot formats for its CASHLINK accounts package will continue to be supported until May 1989 (and "limited support" will be available thereafter "by negotiation") even though the company has stopped selling Apricot versions. For existing users who want to upgrade on to an IBM-compatible, CashLink will charge a mere £15 for the program — which will read existing Apricot data files. Details from **0286 3355.** ◆

New e-mail number

Having been bounced off Apricot's JET mailbox list, we've now signed up with MicroLink. Henceforth our e-mail number is:

72:MAG068

[from overseas 10072:MAG068]

Telexes should still be sent to the Telecom Gold bureau number ...

265871 MONREF G

... but they should now quote reference **72:MAG068** at the start of the message.

Incidentally, the sharp-eyed will note that APRICOT FILE is now a publication of the TP Group Limited — we finally got round to changing the company's name from 'Permapoint'.