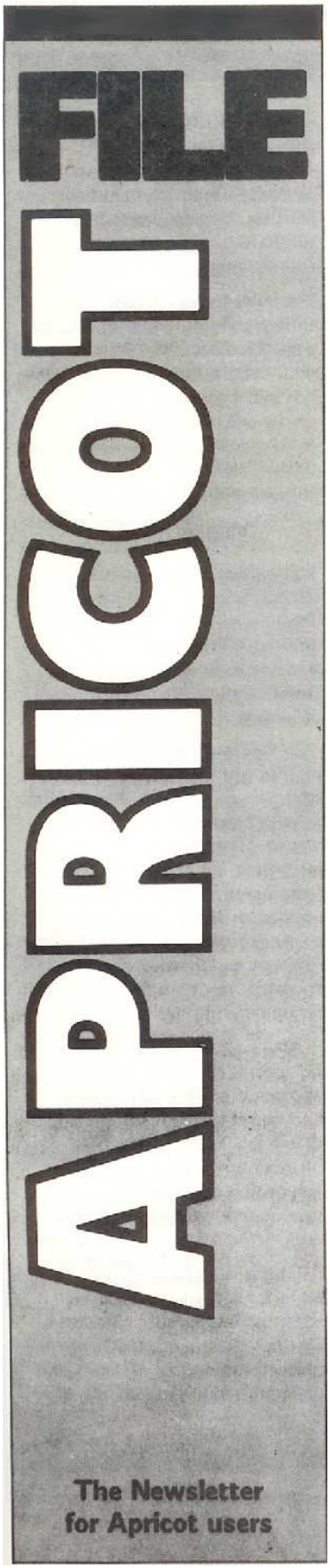
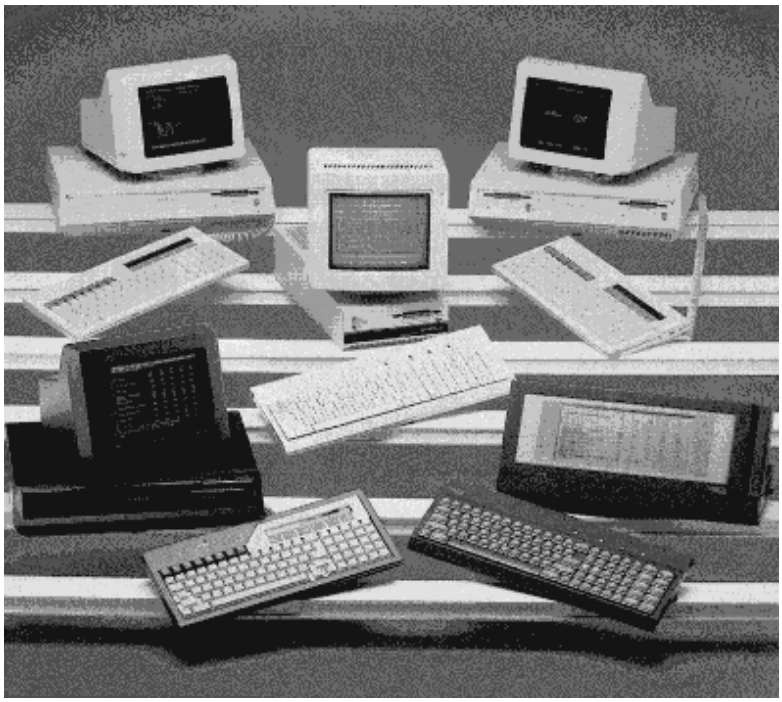


Apricot File 1_9



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

Release 1.9

FILE APRICOT

The Newsletter for Apricot users

June 1986

About face: Apricot changes direction

□□□ IBM-compatible Xen as main product □□□
□□□ 15 million year-end loss □□□
□□□ PC and Xi killed □□□
□□□ F series killed □□□
□□□ 180 sacked □□□

By Simon Potter

Apricot's bad year was rounded off with a bad week. In the space of five days, the company came up with this lot:

- a further 180 redundancies
- an interim set of end-of-year accounts that show a £15 million nett loss on slightly reduced sales
- the death of its 'commodity computer' products (which basically means anything using the Intel 8086 chip — the F series and the Apricot Xi/PC)
- a hastily-arranged press briefing to City Editors that produced all kinds of bad press and saw the share price plummet from around 90p to 54p
- a circular that told the dealers all this after they'd read it in their morning papers
- a complete *volte-face* from the heady days of "Apricot doesn't need to follow anyone else's standard" and declared that its future lay in IBM-compatibility
- the promise to return to profitability in the current year with a rather lower level of total sales by abandoning the mass market and going for high-priced added-value sales, particularly of multi-user systems.

Apricot MD Roger Foster described the whole affair as a "sea change" for the company. Other Shakespearian allusions might come to mind: *Titus Andronicus* should be good for a few, and there's all that stuff in *Othello* about trust. *Hamlet* looks appropriate, too: "When sorrows come/They come not single spies but whole battalions".

Ok, let's be charitable and look for the Good News in all this. Things might not be as bad as they seem, at least not in the longer

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■■■ ISSN 0268-6066 ■■■

Apricot About Face

term — and at least not for Apricot plc's longevity.

The major news for Apricot, for its dealers, and above all for its 100,000 users, is the demise of what Foster described as the company's 'commodity computer' products.

What this means is that production of the F series and the Apricot Xi/PC has ceased. There are some 6,000 machines in stock, however, and the Xi/PC line will continue to be available "probably for as long as a year". And Foster also promised "total support" for *five* years — which in practice seems to mean maintenance support, so hardware reference information and spares should continue to be available.

Obviously though these machines won't get a lot of resources from the company. There will be no fresh development on them, and you shouldn't expect to get answers to queries from Apricot plc (though most of us will probably notice very little change in *that* policy).

In the short term, the Good News is that Apricots will become pretty cheap on the streets. Not exactly joyous information if you've just paid the full list price for one and you don't want a second, but well worth considering if you're looking for a two- or three-year lifespan on a business system.

Existing stocks are being discounted heavily to clear them. Apricot isn't publishing recommended retail prices for the F series any more, but the dealers are being offered them at very substantial discounts (one dealer told us that in quantities of ten he would be paying something like £250 apiece for F1s). Apricot's intention is presumably to allow these machines to find their own price, and perhaps to allow the dealers to make some short-term cash by low-margin box-shifting.

The price cuts on RRPs for the PC/Xi have been made public; they represent a drop of nearly half — twin floppy systems for £999, a 10MB Xi at £1,399. That's a decent price for a 256KB MS-DOS computer with a hard disk.

The dealers

And in the showrooms you might also find these models at a better price, for one of the three sweeteners that dealers are getting is an increased level of discount — formerly Apricot's dealer prices started at around 65 per cent of RRP, now we hear that something like another 10 points have been shaved off.

The other two tempters are price-protection on existing stocks and the guarantee that the retail chains won't be given the products. Price protection means that a dealer who ordered at the old price after 1 June will be billed at the new price and credited with the difference, so there shouldn't be too much squealing from them about unprofitable stocks: we found a couple of smaller dealers who did complain that they had unsold Apricots, but most of those we contacted are quite surprisingly genial about this. And they all like the restriction on retail chains: Dixons' sudden appearance as an Apricot seller caused a lot of bad feeling.

Apricot has had just about all its dealers to a couple of information-dispensing startegy-setting question-and-answer beanfeasts in the last few days, and the tenor of these meetings was also surprisingly good. "No-one has a dealer network that is as strong and as loyal as ours" declared Foster at the press conference: that may be due in part to a year's weeding-out, which dropped the number of Apricot dealers from a high of 800 to the present 500 or so (and some of the departures were among the company's more vocal critics), but it does seem that the resellers are generally happy.

Obviously it's the bigger dealers who will benefit most. They want an IBM-compatible Apricot, and they've got one: they can afford to make the most out of the stock clearances, so shifting cheap Apricots will boost their immediate cashflow. They are best able to take advantage of the present situation and the future strategy.

But we even heard grudging acquiescence from some of the smaller guys. There was a bit of grumbling, of course, on the "left in the shit again" level — "well, what else do you expect from Apricot?" But "it gives us a six-month opportunity to sell Apricots" said one. "Then we'll see. We'll probably look for something else to stock, but for now we'll stick with Apricots." Another remarked that he saw opportunities to sell harder to existing customers — "either support or switching: we can sell Apricot add-ons, services, software upgrades ... or we can move them on to some IBM-compatible".

Jobs

There are now a further 180 people out in the real world who know something about the smaller Apricots — well, *someone* at Apricot must have known something about Apricots. Some of then will surely turn up in support capacities at dealers and software houses.

And now that the company has reached a total staffing of around 650 people (against the year-ago high of 1,250), at least there shouldn't be any *more* redundancies.

The balance sheet

That £15 million loss isn't quite as bad as it looks. Apricot reckons it's trading profitably now, and the interim accounts show a trading profit of £4.2 million on sales of £90.6 million. That compares

with the year-ago £11.7 million income from revenues of £92.4 million, but at least it's a day-to-day profit on sales that haven't slipped by too much.

It was the extra items that produced the net loss. And Apricot seems to have crammed *all* the bad news into its 1985/86 accounts — notably the £12.7 million 'provision for restructuring', which mainly represents a write-off on existing stocks plus redundancy payments: £6.4 million on closures of and losses incurred by associates and subsidiaries: and £5.8 million on the Portable. Presumably the retooling and R&D costs for the new products have also gone into these figures (the full audited accounts aren't available yet).

Legally the company isn't now allowed to pay any more dividend to shareholders, so a few hundred thousand was saved there. And there should be a helpful tax refund from previous years' profits.

On the credit side, the company claims net assets in excess of £20 million. Some £5.9 million of that is in cash, which isn't at all bad: Apricot has always liked money in the bank. There are no borrowings at all, and Foster told the press conference that the company wouldn't be looking for any outside money in the forseeable future.

So next year Apricot should have a bit of a clear run ... provided there are no more disasters. Apricot's chosen future (of which more later) seems a bit risky to us, but it could work. More interesting, a loss-making cash-rich company with no borrowings and lots of assets represents a classic scenario for a takeover bid; the intangible assets do include 500 dealers and 100,000 users, after all.

The new products

The new product is the Xen-i. This looks like the Xen with a slightly different (AT-like) keyboard, a hard disk as standard (no floppy-only models), and one slimline 5.25in floppy disk drive (takes AT-style 1.2MB floppies). It's basically an IBM PC/AT clone with the physical appearance of the Xen — "we wanted to retain the Apricot style, performance and individuality while offering the IBM standard".

Technically it looks quite good. The main circuit board is pretty packed (there were a couple of ostentatious bodges on the one we saw, with a miniature daughter board and some blue wire straggling around: but we're assured that within three months these patches will be incorporated). Clever bits include the use of very high integration: there are nine gate-array chips on the system board that do the kind of thing for which the PC/AT needs five slot-in cards.

The Intel/Lotus/Microsoft 'Extended Memory Specification' is standard — that's a hardware trick which increases memory addressing above the 640KB limit imposed by IBM's original espousal of the 8088 processor and MS-DOS.

You can get three IBM-compatible half-size cards inside the cabinet, but there's no space for full-size add-in boards: those you'll have to add via a three-slot extra-cost expansion box.

The processor is the ubiquitous Intel 80286 running at 10MHz. The IBM-compatibility comes from a Phoenix BIOS; Phoenix is the New England company that supplies the IBM-like BIOS for just about every IBM-compatible machine apart from Olivetti's, and we were told that there just wasn't any alternative to it "even though we've found quite a few bugs in it".

Incidentally, Apricot's interest in the much-vaunted Control-C Software SoftClone product — which was reported to be providing IBM-compatibility on the Xen — seems to have been largely a red herring. An unattributable off-the-record source on his second glass of press conference wine gave us a personal view totally unconnected with the Official Apricot Line: "We looked at it briefly. But someone heard about it, people started talking about the Xen getting SoftClone, people started asking us questions about it, so we gave up and put it through a full evaluation. Then we rejected it." Why? "Didn't work." What about ICL and Research Machines signing up to take SoftClone on their machines? "We laughed."

The floppy drive is from Panasonic, the 20MB hard disk comes from Miniscribe, the 50MB unit is a Scottish-built Rodime ("the fastest, highest-capacity 3.5in hard disk on any current computer").

Production of the Xen-i has just started. Apricot is forecasting volume deliveries next month, and the company says there's already an order backlog.

Implications for Apricot

The spec of the Xen-i makes it a decent machine for high-powered multi-user applications, either via Xenix (the espousal of which on the standard Xen appears to be surprising Apricot) or in networks. It's not particularly cheap: 15 per cent less than an equivalent IBM PC/AT, we reckon, but at least 15 per cent more than the mass of el cheapo AT-compatibles now arriving from Taiwan. But it is reasonably well specified, and it is fast — in particular, it should outperform the 8MHz IBM PC/ATE (the latest version) and the Compaq DeskPro 286 (probably the market leader among the AT-compatibles).

Apricot obviously needs IBM compatibility if it is to survive. The new machine takes the company into new markets, especially those big corporate users with a 'buy IBM-compatibility' policy. It

should also revive flagging fortunes in the international market.

The Xen-i also opens up new applications areas, particularly in 'workstation' uses like CAD-CAM which demand a lot of memory, a fast processor, and decent graphics.

Whether this is a Good Move is open to question. If Apricot declines to compete on price, it must be placing a lot of emphasis on the perIormance both of the computer and of its dealers. To succeed with the Xen-i, it will almost certainly need some more dealers — particularly some of the larger Central London dealers with an established hold on corporate purchasers, the kind of dealers who find it easiest to sell IBM-compatibility to such customers and who in the past have eschewed the Apricot image of low-priced non-compatibility.

A few big orders, even from existing Apricot users like the Post Office and Thames Water, would do wonders — for the share price, for the company's prospects, and for the products. But it also needs a raft of orders from universities, from ICI, from Peat Marwick ...

With this machine, Apricot has changed direction completely. It is clearly expected to be sold by systems houses and 'value-added resellers' to customers who need and/or don't mind paying for performance and facilities.

It's not even Apricot-compatible. Sure, there was much talk about the ability to plug in Apricot-format cards via an adapter: but as yet there's not even an external 3.5in disk, and the thing certainly won't run Apricot software. There *will* be a 3.5in disk version — "we expect 3.5in disks to become the standard for IBM software distribution in 1987" — but that won't be Apricot-compatible.

And what of the original (six-month-old) Xen? Foster said this effectively saved the company's bacon in the last quarter of 1985/86, selling well enough to drag the firm's operating profits round: "without the Xen the company would be in very severe straits". The Xen now appears to be something of an interim product, and while it remains in the catalogue it's now being promoted in part as the upgrade path for any existing user who wants to stick with the Apricot route. Of course, all Apricots including the Xen can participate in a network with Xen-i systems (or indeed with machines from lots of other manufacturers).

But clearly the message is: the Apricot is dead — long live Apricot. We're not sure about the accuracy of that, and we're certain that the sentiment won't be echoed by everyone ... ◆

Diary dates

On with the Shows

A round-up of potential relevance

July 1986

1-3 KBS '86 *London.* Conference and small show on Knowledge-Based Systems (*aka* 'Expert Systems'). *Organiser: Online, tel 01-868 4466*

16-18 PC User Show *London.* For users of IBM PCs and compatibles, of course, but much to interest the non-committed too. *Organiser: EMAP, tel 01- 608 1161*

August 1986

20-23 Officetech/Computer 86 *Kuala Lumpur.* Aiming to become Malaysia's premier office automation and computer show. Last year's event was pretty good (and pretty crowded). *UK contact: Overseas Exhibition Services, tel 01-486 1951*

September 1986

2-6 Comdex Australia *Sydney.* The down-under version of the the show for systems integrators. The US events are probably the key industry-watching exhibitions, but Comdex Europe this year was drab and there's no guarantee that the Aussie implementation will be any better. Australasia's market potential and a few more months of heavy competition in the PC/AT markets might have put some spice into the business by this date, though. *Organiser: Interface Group, tel USA (617) 449-6600*

3-7 Personal Computer World Show *London.* The ninth time out for PCW, which last year hit a new attendance record (63,000) but seemed a bit uninspired to us — at least as far as the business computing side went. Still, it is one of the few UK shows that are probably unmissable if you want a snapshot of what's going on in British microcomputing. *Organiser: Montbuild, tel 01-486 1951*

9-11 Telecomms Show *London.* Telecomms products for small businesses: it's modestly priced for exhibitors, so should attract some interesting options. *Organiser: Infotec, tel 01-580 4766*

15-20 Sicob *Paris.* The giant French computer show, heavily weighted towards bigger users and larger computers now that micros have been separated out into a Spring event. *UK contact: French Trade Exhibitions, tel 01-439 3964*

17-22 SMAU *Milan.* All-purpose office automation event, usually interesting. *UK contact: BETA, tel 01-405 6233*

30 Sept - 2 Oct International Expert Systems Exhibition *London.* Small, specific, probably still a bit previous ... *Organiser: Learned Information, tel 0865 730275* ◆

The Disinformation Column

On BIOSed judgements

By David Langford

Mounted police, I understand, were called out to help control the raging apathy which swept Britain at last issue's lack of Disinformation. Your columnist was unavoidably indisposed (translation: busy writing software for corrupt personal gain), your Editor tolerant but firm (translation: the wretch moved his deadline, in the wrong direction). In future I've promised to be as swift and reliable as, well, as ACTIVITY ...

The shape of things to come

It seemed about time to investigate BIOS 3.1 as provided for the PC/Xi. Does it really cure ever so many bugs? Will the old programs run? If not, why not?

By and large, users of PC/Xi BIOS 2.7 won't notice much difference. One obvious point is in the included keyboard table: the special functions CALC and PRINT have migrated to the SHIFTed positions of those keys, probably a good thing when you eventually get used to it.

A few of the escape sequences for screen control seem to have changed slightly, to conform with oddities already noted on the F2 and F10. ESC M (delete line and close up) and ESC l (erase line) both fail to reset the cursor to the left, so PC/Xi programs which rely on this feature may go a little awry in screen control. ESC f thankfully no longer crashes the PC. ESC 2 and ESC 3 still turn on and off cursor flashing, despite the unavailability of this feature on the dreaded F series.

Presumably a change in screen handling is responsible for the fact that the venerable SETUP, KEYEDIT, FONTEDIT and DISK seem at first glance not to work! Hideous visions of a lifetime of ACTIVITY flashed before my horrified eyes ... The problem in each case is a screwed-up screen: all of the nice ladder menu appears, but in jigsaw fashion. Evidently these programs are doing some kind of screen reset which no longer works.

The solution? Write a tiny batch file which will run a program and, immediately before doing so, reset the screen *properly*. Thus my little X.BAT, as follows:

```
ECHO OFF
ECHO ^[E
%1
```

The ^[is an Escape character (inserted in SuperWriter by CONTROL Q 2 ^ ESC, in the Turbo Pascal screen editor by CONTROL P ESC, and in horrible EDLIN by CONTROL V [). ESC E will clear and reset the screen, even in BIOS 3.1. In fact you need only home the cursor with ESC H, but ESC E is tidier. (The MS-DOS command CLS is no use here, since it doesn't home the cursor.)

With this teensy file on the disk, you can successfully run DISK by typing "X DISK" and Return; and likewise for the rest.

On the other hand ...

Your mad rush to write X.BAT may be slowed by my next interesting snippet. Apricot plc has at last relented about its compulsory and usually slothful 'front end' systems like MANAGER and ACTIVITY. Most people discard these except, reluctantly, for formatting and copying disks — since the MS-DOS utility FORMAT was of malice aforethought not supplied.

It is now ... though not with the PC/Xi. Instead, nip round to your nearest Xen user and beg copies of two very interesting files supplied in the UTILITY subdirectory of Master Disk 3. These are FORMAT.EXE (at last, MS-DOS the way it was supposed to be!) and DCOPY.EXE. Both work nicely on the PC/Xi *if* you have BIOS 3.1.

DCOPY just copies disks. FORMAT is self-documenting (type the filename alone for some eventually comprehensible info); it will format, copy system tracks, set a specified volume label, update existing systems disks, all sorts of jolly things. Farewell to ladder menus and the ACTIVITY arrow (which, like Zeno's, came close to proving that motion is impossible).

I am reliably informed that both these utilities have just fallen off the back of a lorry near the APRICOT FILE offices. So has SCOPY.EXE, Apricot's belated fix for single-drive file copying. F1 users keep complaining about corrupted SuperWriter dictionaries, and often it turns out that COPY /S is damaging files longer than 64K even as it copies them. SCOPY is supposed to fix this; it also allows

multiple copying with wild cards on single-drive Apricots.

The only reason I'm nervous about adopting BIOS 3.1 for all my system disks is that the DEALS FOR READERS screen accelerator FAST.COM now makes little or no difference. Awesome David St. John Wallis of OmrC Computers tells me that BIOS 3.1 is "far more complicated" than versions of yore, and is much harder to speed up. Almost as if Apricot resented the impudence of those who first made the improvement ...

Patching the BIOS

Happily my own little BIOS titivation seems equally effective in 3.1. Like most intelligent entities within the known universe, I am deeply irritated by the way the PRINT key invariably cranks out a whole page *before* printing a screen dump. If you're using continuous stationery, you waste a page; if not, you stand there holding the paper against the tug of the roller until it condescends to do some actual printing.

Clearly an improvement could be worth trying. In APRICOT FILE Release 1.7, I described at tedious length the kind of detective work needed to work out a program patch: this time, to cheers of relief, we'll skip the police procedural stuff. As a minimum, you need a spare system disk and a copy of DEBUG. Life is much easier if you also have CHMOD.EXE from Apricot Disk No 2, since the BIOS is in a hidden system file which you must first expose to the cruel light of day.

All the usual warnings apply. This patch has been tested only on BIOS versions 2.7 and 3.1. I refuse to accept responsibility if your Apricot goes into Chernobyl mode after its installation and gushes Brown Windsor soup from every orifice. Very briefly, then:

- The BIOS is contained in the hidden file IO.SYS on your system disk. Use CHMOD to convert the file attributes to 'normal' and 'visible' (by typing CHMOD IO.SYS /SY).
- Then DEBUG IO.SYS. With DEBUG, locate the *first* occurrence of the pair of bytes B0 0C in the file:

```
S 100 FFFF B0 0C
```

  Change the second byte, which is in fact the hated 'form feed' code, to a zero. For example, in PC/Xi BIOS 3.1 the byte pair is first reported at 1B1C; so the 0C can be zapped with ...

```
E 1B1D 0
```

- Write IO.SYS back to disk with the W command.
- Then use CHMOD to reset the attributes to 'hidden' and 'system':

```
CHMOD IO.SYS /HX
```

That's it. Reboot the computer with this newly perverted systems disk, and see what happens with the PRINT key now. I'll just retreat into my hermetically-sealed bunker while you do it.

Bug corner

Everybody seems to want graphics screen dumps on their Epson printers. As an independent smartarse, I lashed out £75 on the fabulous Friedman's MXDUMP — as offered elsewhere in this very issue.

The good news is that it works extremely well, enabling me graphically to immortalise all my brilliant mating positions against the APRICOT FILE chess program which I invariably thrash even at the highest level, har har.

The less good news is that MXDUMP is a mite user-hostile: I spent ages hanging up my computer until I found the small print at the back of the manual advising me to disconnect three lines of the printer cable. At £75 for a 2K utility, I reckon an advance warning or a free cable could be thrown in ...

MXDUMP also hangs irrevocably should you forget to switch the printer on first. Otherwise, it's a lovely bit of programming.

I also found a bug in Turbo Pascal. This won't bother most users ... but for the rest of you, *don't* call Intr($25) or Intr($26), the interrupts for absolute disk reads and writes, from within a Turbo procedure. They work ok from the main program, though sometimes with weird side-effects (like the program will 'write' to a protected disk without reporting any error).

All this is because Turbo keeps its procedure addresses on the processor's stack: unfortunately these interrupts destroy the registers BP (base pointer) and SP (stack pointer).

There is a solution, using the Inline procedure to machine-code the interrupts and preserve the pointers, but — to pinch a useful mathematical bluff from Fermat — this margin is too small to contain it. ◆

Review

3-D CAD for £50?

SPADII by Moonlight

By Stuart Bunt

Would you buy a used car from Arthur Daley? Would you buy software from a company called 'Moonlight Computing'? I came across SPADII in advertisements that offered a true three-dimensional graphics package for less than £50. With 3-D CAD packages for the Apricot normally running to £2,000 or £3,000, I had to see what this could do ...

What happened next

My cheque was cashed immediately. Six months later I was beginning to wonder if 'Moonlight Computing' wasn't a suspicious name; but numerous phone calls (including one to the advertising manager of the magazine concerned) did mean that at last the program arrived. The author was obviously using the intervening six months to work the bugs out of the program — and from my first impressions, six months wasn't long enough.

The 'manual' for SPADII consists of nothing more than a listing of the commands with a one-line explanation of what each one does. You're left on your own to find out how to get the program to run, what the terms shown on the screen mean, how best to produce a drawing, and what the limitations are which cause the program to crash so regularly (and there are many, I seem to find a new one each day).

On receiving the disk it took me a while to realise that the BASRUN.EXE file was more recent than mine. Only after replacing my BASRUN with this one (dated 7/08/84) would SPADII run: typically enough, there was nothing in the manual about this.

The opening display was covered in a mass of symbols which took minutes to load. Many tries later I found that the program would run only with the Apricot's default character set: this then produces a clean screen with a page number at top left (I still don't know what that means) and a 'pad' number.

In use

Drawings are stored 60 to a disk (referred to as a pad); each drawing is called a 'sheet'. The sheets and pads can be named, but this doesn't seem to correspond with the names of the actual files on disk — so they cannot be found or manipulated within MS-DOS without some detective work.

The lower three lines of the screen show the assignments of keys 1 to 9 (no fancy use of MicroScreen or even function keys here). When you select one of these, a new set of command labels appears in these three lines. On my machine (a one-year-old single-sided Xi) this takes 10 seconds — which is an eternity when that interval happens between each keystroke! More recent machines have much faster screen-handling, and the poor performance of SPADII may simply be a hardware problem since it isn't helped by simply booting with a more recent BIOS.

It is based on GSX, so the program will run on the full range of Apricot machines from the Xen to the F1.

The drawing is shown in a box on the left upper quadrant of the screen. The righthand side of the screen shows the pad and drawing name, the position of the 'camera', the point at which the 'camera' is aimed, the 'focal length' of the 'camera', and the present position of the drawing cursor. (The 'camera', by the way, is what other CAD packages refer to as the 'viewpoint'. This you may or may not find by trial and error — you soon learn not to expect any help from the 'manual' on points like this.)

All positions are given in terms of unspecified units in a stated direction: east, north and up are positive numbers, with west, south and down expressed as negatives.

To create a drawing, the end coordinates of planes have to be specified so that an object can only be represented by a series of planes. No curves are possible; a sphere would have to be made up of many polygons to end up looking like the mirrored ball seen in dance halls.

No editing is available, either. There are no facilities for changing a plane once created, short of deleting it and starting again. It is also impossible to modify a drawing and keep it stored under a different file name. These restrictions and the slow screen handling mean that producing even the most primitive drawing — such as a house-shaped block — can take *one hour*.

And it is not helped by the bugs — for instance, the keys marked 'south' and 'west' are actually reversed: 'north' is 'up' on the display only when looking at the drawing from below. It's better to work out the coordinates on graph paper than to try and draw freehand on the screen.

The fun comes when the drawing is finally recognisable: then you can move the viewpoint 'camera' to see it from other directions and distances. But beware ... if you pick a viewpoint too near the object, the program crashes. Point the 'camera' straight at the object, the program crashes. Choose too small a 'lens', and the program crashes.

And remember that it can take two minutes to get the drawing back!

Once these problems are identified and avoided, it can be fun to look at the object from miles

above, from the worm's-eye view, and so on. If only the program ran faster! The hidden line removal takes about four minutes; but it is effective. Besides, even the most sophisticated CAD packages can take this long.

In theory the drawing can be plotted or dumped to a suitable graphics printer. I would have liked to have included an example of the results possible with SPADII; but even when my plotter driver arrived (three weeks and a phone call after the arrival of the program) I could not get it to plot anything without crashing. Indeed, I still can't.

Last words

It can take an afternoon to draw a simple boxy house; and halfway through the program will crash anyhow, leaving you swearing as you realise you have to start again. As it takes fully five minutes to load a drawing, add one plane and save the change, this is not something you'd want to do too regularly!

Although this program is cheap, I resent the time I have wasted attempting to get it to run and the numerous restarts from square one after a crash.

And I'm not sure who would find a use for SPADII. Its slow speed and lack of any editing facilities makes the production of any detailed drawings impossibly slow; the use of planes to construct objects restricts it to blocks and polygons, making it hard to produce any curves. It may be of some interest to school students learning about coordinates and perspective; but until the bugs are ironed out and the program speeded up, I think it would rapidly destroy any interest in the subject.

I cannot recommend that anyone should buy this prematurely released program. ◆

SPADII	
Description:	Three-dimensional computer-aided drawing package
Supplier:	Moonlight Computing Laboratories
Address:	48 Station Road Longfield Kent DA3 7QD
Telephone:	04747 4932 (*but repeated calls to this number have gone unanswered*)
Price:	£50
Configuration:	Any Apricot
Conclusion:	Slow, clumsy, bug-ridden: not recommended

Technote

SuperCalc's SDI

By David St. John Wallis

Some with SuperCalc may have seen a file called SDI and don't know what it's all about. Well, it's about getting stuff into SuperCalc-intelligible format. It will translate VisiCalc files into SuperCalc format; but it can also tabulate all your telephone numbers so you can add them up, or sort them, or whatever.

Let's say you have an ASCII file called PHONES and the best bit reads like this:

```
OMRC Computers      0705524805
OMRC Graphics       99523173
OMR Consultants     0428735255
OMR Nigeria         01012341830320
OMR Puerto Rico     01018097215500
OMR Operations      013815155
```

Well, as it stands SuperCalc won't understand it at all. Here's what you do. First insert commas in the gaps ...

```
OMRC Computers ,    0705524805
OMRC Graphics  ,    99528173
OMR Consultants ,   0428735255
OMR Nigeria    ,    01012341830320
OMR Puerto Rico ,   01018097215500
OMR Operations ,    013815155
```

... then save it to disk in system format. Call it PHONES.CSV (CSV means 'comma separated value'). Transfer the file to the directory where SDI is located, and run SDI by typing (you guessed it) "SDI".

Up comes a message: go for option B. Enter "PHONES.CSV", press Return twice and have a Heineken. SDI will meanwhile convert the file into one called PHONES.CAL. And that's a standard SuperCalc-format worksheet which you can load and manipulate in all kinds of ways. Like:

```
01012341830320      OMR Nigeria
01018097215500      OMR Puerto Rico
013815155           OMR Operations
0428735255          OMR Consultants
0705524805          OMRC Computers
99528173            OMRC Graphics
```

Or ...

```
OMR Operations      13815155
OMRC Graphics       99528173
OMR Consultants     4.2874e8
OMRC Computers      7.0552e8
OMR Nigeria         1.012e12
OMR Puerto Rico     1.018e12
```

And of course you can come up with valuable arithmetic:

```
2.032e12        sum of numbers
6               number of numbers
3.386e11        average phone number
-.962369        cosine of mean telephone numbers
```

Review

The £15 Turbocharger

The NEC V30 chip tested

By Paul M Lavin

For those with the nerve to see their computer in an advanced state of undress, substantially faster operation is promised for the triffling sum of £15 plus VAT. Depending on the nature of your computer tasks, performance gains of 10 per cent are possible — and some jobs will be faster by 20 per cent or more.

Two screwdrivers and a gallon of patience are all that are needed: simply by plugging in a different central processing chip, it's possible to upgrade your Apricot. The degree of improvement is dependant on the type of operations for which you use your computer. Since the new chip can support floating point maths, you too can get the same results as one SuperCalc user reported: an 80 per cent reduction in recalculation time (*oh yeah? — Ed*).

NEC, the semiconductor giant, produced the V20 and V30 chips as a replacement for the ubiquitous Intel 8088 and 8086 respectively. Xen users need read no further ... but don't go too far away: the NEC replacement for your 80286 will be available before long. Operators will probably need to be cautioned about whiplash when powering up! But Big Blue PC and its clones employ the 8088: your favourite Apricot has an 8086 slotted into a socket deep in its innards — and that may be a candidate for replacement, depending on the BIOS variation with which you are currently afflicted.

Therein lies the rub ...

For the BIOS is the fly in the ointment. The Basic Input/Output System is a very elementary set of machine instructions that tell your Apricot how to get MS-DOS off your boot disk, how to allow MS-DOS to write on to any disk, what to put on to the screen when, how to recognise what keys you're pressing, and more of that ilk — all very basic to the computer's operation, hence the name.

Now, many owners won't need to be told that Apricots have gone through a succession of BIOS versions necessitated by shortcomings and downright errors present in earlier editions.

PC and Xi users using the BIOS 3.1 are out of luck — the NEC V30 just won't work with it. This 'generic' version is supposed to provide compatibility across the entire Apricot range. Among the alleged advantages for this BIOS is faster screen-handling; I've not observed any such improvement on my PC. If you aren't trying to cross-pollinate an Xi and a Xen, it may be worth your while to use an earlier BIOS version to gain the demonstrated advantages of the V30.

The earliest version of the BIOS from prehistoric times was 1.8, for single-sided machines: this one has no difficulty with the NEC V30. Other liabilities and the desire to use double-sided drives subsequently caused Apricot to release Version 2.1: and the NEC chip gets along swimmingly with Version 2.1 as well. But it has problems with more recent versions.

When using the V30 with BIOS 2.4 you will get a keyboard error message. Ignore this erroneous signal and the advantages of the new chip can be yours. Unfortunately, 2.4 was riddled with other problems — so yet another revision was cobbled together.

Yea, verily, 2.4 begat 2.7. Version 2.7 was to be the Great White Hope to cure the deficiencies of 2.4 ... but the V30 doesn't work well with it. It will sit there sounding the bell unremittingly until you pull the plug. As much as I dislike my Apricot chiming in to remind me that I've done something stupid, I would hesitate to set the bell volume to zero or pull the wires off the bell merely in order to use the V30 unless the advantages were really great (a monster spreadsheet for instance should benefit from the V30 — more about this later). It would be smarter to use an earlier version of the BIOS instead.

If despite all this you are keen to gamble £15 but not the integrity of your PC/Xi, be assured that correctly fitting the NEC V30 will not harm your computer even if you experience BIOS problems. The machine will simply not work. Full function can be restored by refitting the original Intel 8086.

Options for the F series

The prospects are much brighter for the happy hoards that flocked to Dixons to buy the born-again Portable. The benighted owners of the F1 are similarly blessed. Anonymous sources advise me that the Portable is only an F1 with an even worse screen, so my success with the V30 in a Portable should be repeatable with an F1.

These two machines carry their BIOS within a specially-designed chip. Their ROMs enable the system memory to be freed for your own devious purposes instead of being used to hold machine operation instructions. For this reason, the 256K in the F1 and Portable is 'bigger' than the same amount of memory found in other Apricots.

Virtually all of the 15,000 Portables sold by Dixons came with ROM BIOS version 1.8; a few had 3.1. You can check yours as the version number appears in the lower left corner of the screen after you switch on but before you boot up. The V30 works great in both the BIOS types.

How much faster?

To establish the speed increment produced by the NEC chip I inaugurated a new standard in computing benchmarks. I have called them LIAR (to put them on at least the same level of plausibility as most manufacturer's claims): it stands for 'Lavin's Irrefutable and Arbitrary Results'.

I felt it prudent to compare the performance of the new versus the old processors on my ordinary everyday computer tasks. Benchmark 1 is a measure of time it takes a little Basic program to run through a text file; Benchmark 2 compares the time necessary for SuperWriter to spell-check a given document; Benchmark 3 times the recalculation of a medium-sized SuperCalc 2 spreadsheet; Benchmark 4 gives a comparison of the time needed for MS-DOS to copy a big file.

I performed the tests on my Portable, repeating them for both the NEC V30 and the original Intel 8086 using both BIOS 1.8 and 3.1. Greater love hath no Apricot owner. All of these tests were performed with programs and files resident in RAMdisk to eliminate disk accessing time as a confounding variable. The results are shown in Figure 1.

It is interesting to note that there is no performance difference on the LIAR benchmarks between BIOS version 1.8 and 3.1. And I was unable to substantiate the claim of the unknown SuperCalc user; but my spreadsheets are smallish and not too complicated mathematically. Perhaps if you have elephantine spreadsheets you could appreciate the performance edge of the NEC chip more fully ...

I don't know how highly you value your time or if you enjoy crocheting while waiting for the Fruit of Glenrothes to churn through your work. But I can't bear the tedium. Even though the performance gain is moderate, apparently around 10 per cent for my real-world applications, the bottom line is very modest; I will be buying the NEC chips for all five of my Portables.

The chip comes with a brief installation manual that doesn't deign to discuss the joys of Apricot modification, dwelling instead on the products of John Cleese's employer and others of that ilk. Never fear, for I am here to guide you.

If you've got kit and applications that will use the NEC V30 to good advantage, it is a simple matter to fit the new chip. To do the job you only need a small Phillips-head screwdriver, a small flat-bladed screwdriver and a half hour's time.

The best place to do this job is in the kitchen or another room that doesn't have carpeting. This seemingly incongruous requirement is dictated by the extreme sensitivity of the NEC chip to static electricity. If you merely touched a CMOS device like the NEC chip after shuffling across the rug you would literally blow holes in the little thingies inside that do the computing.

Plug in and go ...

The following chronicles the fun and games of fitting the NEC V30 to a Portable. If you are tempted to follow in my footsteps on another model Apricot, you will of necessity have different screws to undo but in philosophy you will repeat the same set of operations.

Switch off; remove the mains lead, light pipe (if used), printer, modem and monitor cables; and take any disks out of the drive (you're very naughty if this last instruction applies to you). You should also remove any expansion boards fitted.

For the Portable, undo the two Phillips screws in the back of the system unit near the upper corners (behind the screen). The screen unit folds down revealing the back of the motherboard.

A single Phillips screw beneath a bit of plastic allows you to fold the motherboard down on top of the screen unit. You will then be treated to the sight of more chips than you have ever seen without the usual accompaniment of fish and vinegar. Your doomed Intel 8086 is just shy of two inches long and is labelled clearly: it sits on the right of the motherboard very close to the edge nearest you.

On the left side of the 8086 chip is a very important little dimple. This is the means for correctly orientating the chip in its socket. The NEC chip has a similar dimple that *must* be orientated in the same way as your original chip.

To remove the 8086, insert your small flat-blade screwdriver beneath each edge in turn and lever the chip up from its socket. Do try to be as gradual and uniform with your prying as possible. Put the now redundant 8086 in a safe place for the future — in case you have to send your computer in for service, the presence of the NEC chip could seriously effect your warranty rights (*actually it would invalidate them completely — Ed*).

Plugging the V30 in is straightforward but a bit fiddly. It will be your lucky day if all 40 pins slide into their 40 new homes in one go. Gentleness and persistence are called for: resist mightily the temptation to use a hammer.

Assembly is the reverse of disassembly. Put the framus into the watsit and twist the bivlet 3 turns counterclockwise. Seriously, do check that any other connections that you have undone are replaced and that no leads or wires will be pinched when you replace the motherboard with the single screw and then the screen assembly.

Fire it up and enjoy! ◆

The NEC V30 chip is available from a variety of sources, but our preferred supplier (best prices, quickest delivery) is Ctrl Alt Deli at 44 Brownbaker Court, Neath Hill, Milton Keynes MK14 6JH. You can reach Nigel Grant on 0908 662759. He's a good lad even though economics require him to have truck with owners of other makes of computer than our very own favourite.

The benchmarks

	BM1 [Basic]	BM2 [SuperWriter]	BM3 [SuperCalc]	BM4 [MS-DOS]
Intel 8086 with BIOS 1.8	3.60 min	22.7 sec	2.03 min	2.30 sec
NEC V30 with BIOS 1.8	3.22 min	19.9 sec	1.85 min	1.50 sec
Intel 8086 with BIOS 3.1	3.60 min	22.6 sec	2.03 min	2.31 sec
NEC V30 with BIOS 3.1	3.22 min	19.7 sec	1.85 min	1.50 sec
Average improvement	11%	12%	9%	35%

Background: seconds out

As well as being a biggish supplier of peripherals — notably printers and OEM disk drives — and a minor-league computer manufacturer, NEC is of course a substantial Japanese chip-maker.

Back in 1976 NEC signed a ten-year cross-patent licence agreement with Intel. This was a time when Intel was keen to spread the word about the new-fangled 'microprocessors' it had come up with: Intel was also a bit worried that it might not be able to fill demand itself, and besides there was a better chance of industry standardisation on Intel chips if there were fewer competing manufacturers out there.

The licensing resulted in NEC versions of the 8086 and 8088 (in 1981 and 1982 respectively). Intel whinged a bit about patent infringement in the microcode, saying that NEC had produced a bit-for-bit copy which was going beyond the terms of their deal. That one was settled out of court, reportedly with NEC paying Intel a massive royalty.

But NEC had its dander up. Shortly after that dispute was resolved (February 1983) NEC started work in secret on its V series chips. These were designed to emulate the 8088 and 8086, but to do so with superior performance and a lower power consumption.

The V20 (8088 equivalent) and V30 (8086) appeared in summer 1984 and immediately the suits began to fly. Intel alleged that the NEC chips included straight copies of its own microcode; NEC got to court first with an attempt to pre-empt things by filing suits claiming that it hadn't copied Intel's microcode, that Intel's copyright was invalid, and that microcode can't be copyrighted anyhow.

Intel countered predictably enough — it wanted a court ruling that microcode *is* copyrightable and it alleged copyright violation. The US district court judge gave up here and said it was all too complex for a quick 'n' easy ruling; a full trial would be needed.

NEC and Intel are still socking in the claims and counterclaims. NEC argued that Intel forfeited its copyright (if it had any) by allowing second-source manufacturers to put out licensed 8088/8086 copies without any Intel copyright notices; Intel tried to force NEC's distributors to put little stickers on V series chips saying just that ...

NEC has a reasonable case, in fact. It's based on the view that in the case of a microprocessor, the nature and content of the microcode is indivisibly based on the design and structure of the hardware. The relevant wording of the US Copyright Act specifically excludes from copyright protection "any idea, procedure, process, system, method of operation [or] concept ... regardless of the form in which it is ... embodied". NEC argues that the microcode is so fundamental to the chip design that it must be a 'principle' or 'procedure'; Intel's case is that the microcode is covered by the established copyright principles in that it's "a work of authorship". ◆

Doodles by David

Tips and tricks

From the working day

By David St. John Wallis

Here's a sweet idea for SuperWriting: put this line into AUTOEXEC.BAT after everything else —

```
J
```

(Or you can use lower-case if you're mean with your pixels.) To get it to work, have SuperWriter in a subdirectory. Don't have Superwriter in a sub-sub-directory. It's far too good a program to bury away. If you need to know *where* you've buried it away, or how many times you've buried it, use WHEREIS.COM — a really voluptuous program ('voluptuous' courtesy of Ansible Information's dictionary).

Back to J. Type this:

```
COPY CON S.BAT
CD \ SUPER
SW %1
```

Follow it with Control Z. Then type this:

```
COPY CON J.BAT
CD \ SUPER
SW JOBS
```

... and hit Control Z again. Now use SuperWriter to make a file called JOBS. That one file might go like this:

Domestic	Call Henry K. and Lola Abuse letter to Rudoph Murdoch
Work	Mend falsies Devise new wok recipe Translate Chopin's Krakowiak into ALGOL
Leisure	Cross Atlantic on raft of gin bottles Challenge Germaine Grur to a eunuch contest

Now, to see what jobs you've got to do, just reset the machine and watch. Be amazed and thrilled.

Print money

Lots of daisywheels don't have the pound sign. With SuperWriter you can get something which is not a bad equivalent. You go thusly: type f, then thud the MicroScreen in position 2 which says INS MARK, and press Shift and the up arrow — that produces the ^ mark. But you don't see it until you press another letter. So type an H. And in faint letters you will see ^H.

Now you press Control P and shift >, then ~. This subscripts the manana sign — the one under the 9 key.

The final line looks like this:

```
!f^H><-
```

... with the middle three characters in half intensity. And the result — *voila:* a pound sign.

Having taken 11 strokes to do what one should have, save the file to disk. Call it POUND if you like. Or get a better daisywheel.

The golden pathway

Another goodie for your AUTOEXEC file:

```
PATH A:\UTIL; C:\
```

(Or the equivalent. Like if you have your utilities in a subdirectory called UTIL, that's what you do. If you have your utilities in a subdirectory called WORDSTAR, you've probably totally misunderstood the whole concept of hierarchical subdirectories anyhow).

The nice point about this is that you can now call utilities within the \UTIL subdirectory without actually being in the \UTIL subdirectory. As Michael Caine is supposed to have said, "Not a lot of people know that". Well, some people probably don't.

Back-slashing

Even we (*ie David's company, OmrC Computers — Ed*) offer a public domain utility called MOVE; there's another one called QMOVE, but I think someone charges £15 for it. But not a lot of people know that it's unnecessary: you can copy stuff from one directory into another one by using the backslash.

Say you have a directory called CARDBOX and within it lurks the address of the editor in 'external' format. When you want to write him a letter using SuperWriter (which is in another directory) from within the CardBox directory, you can type at the prompt ...

```
COPY JARRETT \SUPER
```

Now, you also need a batch file which goes ...

```
REM S.BAT
CD\SUPER
SW %1
```

... and which is located only within the UTIL directory. From within the CardBox directory you can merely type ...

```
S JARRETT
```

And then you'll be taken into the editing of a file called 'JARRETT' inside Superwriter. Greater minds than mine thought of this but didn't write it down for you just yet. ◆

Review

A Secret Language

Digital Research's CBASIC reviewed

By Lindsay Doyle

Turbo Pascal, LOGO, FORTH, C, even LISP (or 'LITHP' as some pronounth it): all get headlines, but who ever heard of CBASIC-86? Digital Research, which produces it, doesn't even advertise the package — at least not in any of the 12.5 computer mags I read.

Hey, comrades, how about an extended compiled Basic with no line numbers, with the facility to GOSUB and GOTO to named routines, with WHILE ... WEND, with any number of remarks that have no memory overhead penalty, with graphics commands?

CBASIC has all these and more. It's available from Apricot dealers for both MS-DOS and CP/M-86 (though you might have to tell them that they *can* get it from Apricot). It's not copy-protected, but you will need the extensive manual.

The version under review is CBASIC Compiled. 'Compiled' means that the thing took the Basic program you wrote on your favourite full-screen-editing word processor and changed it into machine code once and for all, so that it now runs at much higher speeds than anyone's interpreted Basic (which has to change each command into machine code each time it's read).

Compiling also means that at compile time any selected subset of your personal library of subroutines can be called up and incorporated automatically into your program. This is possible without tears because CBASIC does not require line numbers; and because you can GOTO or GOSUB to named routines.

The joy of numberless lines

This not requiring line numbers becomes habit-forming very shortly after you start to use it. There's nothing to *prevent* you using line numbers, it's just that they are now considered to be 'names' — or, more properly, 'labels'. As such they can be in any order you like ...

```
 50 FOR I = 1 TO 10
 20 GOSUB  10
  5 NEXT I: END
 10 REM: THIS IS MUCH ADO ABOUT NOTHING
 11 PRINT 'GIGO'
 21 RETURN
```

This is a perfectly acceptable (if pointless) piece of routining. It won't be re-ordered; it will run in the sequence written, because the numbers are simply interpreted as labels for identifying lines. The same routine could have been written like this:

```
        FOR I = 1 TO 10
        GOSUB SUBR1
        NEXT I: END
SUBR1   REM: THIS IS MUCH ADO ABOUT NOTHING
        PRINT 'GIGO'
        RETURN
```

Here we see that not *all* lines need have labels, either — only the significant ones.

Readability

'Readability' in software is defined as the ability of the author to come back to it after three weeks in the Canary Islands and be able to make out what the hell I was working on.

Another feature of compiled Basic is the way you can use all the remarks and indenting spaces you want to make your program readable. There will be no memory penalty, as the compilation process strips out everything but the actual commands.

```
   FOR I = 1 TO 10
     GOSUB SUBR1
   NEXT I
   END

   REM: ALL THE SUBROUTINES BEGIN HERE

SUBR1  REM: THIS IS MUCH ADO ABOUT NOTHING
     PRINT 'GIGO'
     RETURN
```

That's certainly legible! Note the use of both indentations and blank lines, not to mention an infatuation with wordy remarks which would have caused my 4K Commodore PET (yes, I'm that old) to go into a tailspin.

To take advantage of this, and to be able to make modifications to the program, you have to keep a copy of your source code, the stuff you wrote on the word processor. But your customer never sees that, unless you are feeling very charitable or you want to sell it at an extra price. Instead he or she gets impenetrable machine language — which can't even be seen without a DEBUG-type facility.

With perfect freedom to add remarks, use indentation, incorporate line spacing, and name subroutines or any other significant piece of programming, you have no excuse for not being able to read your own programs — and, what is even more important, anyone else who has to maintain or modify your work will find the task restful, relaxing, and non-ulcermaking. It's a great way to make friends.

New commands

Some of the more useful new commands other than those involved with graphics are listed in Table 1.

But to me, the most interesting of the commands not found in MS-BASIC are those which access GSX graphics directly — without all that folderol that someone has been publishing for the last umpty-seven issues.

These are listed in Table 2 with brief comments. To get started you use the GRAPHIC OPEN statement to generate a screen (or a plotter or printer page) for co-ordinates 0,0 to 1,1, with the origin in the lower left corner. You can then use the DEVICE

statement to determine the aspect ratio of the selected device if you don't already know it; the BOUNDS statement sets the scale accordingly, so that 0,0: 0,1: 1,1: 1,0: 0,0 draws a square rather than a rectangle.

Table 1: Some non-graphics commands

Statement/function	Comment
ATTACH	Connect printer
DETACH	Disconnect printer
CHAIN	Load and start another program
FLOAT	Convert to floating-point
MFRE	Largest contiguous space available
INT	Return integer portion as floating-point number
INT%	Return integer portion as integer
INTEGER	Specify variables to be integers
LOCK, UNLOCK	Prevent any program from modifying data in a record
MATCH	Return position of specified character pattern in a string
REAL	Specify variables to be real numbers
SADD	Return address of specified string
SHIFT	Return an integer arithmetically shifted a specified number of binary positions to the right
UCASE$	Translate lower case characters to upper case
WHILE n m WEND	Loop to execute statement(s) m while n is false

By using VIEWPORT, you can set any selected area within the BOUNDS to be the area in which graphics data will print; and WINDOW lets you restate the scale of the VIEWPORT co-ordinates to, for example, 1000 by 800.

By ASKing instead of SETting, you can find out at any time what the current setting is.

A graphics tutorial program is included on the disk supplied. Surprisingly, though, CBASIC doesn't have a CIRCLE command to access the circle-drawing functions in GSX.

Functions

"A function is a named, isolated portion of a program that other parts of the program can invoke to compute a value or perform some operation". So says Digital Research, and I tried but couldn't do it better.

You can't call a function with a GOSUB or a GOTO, but you can invoke it with a CALL statement or in an expression.

Functions can be contained on a single line or can occupy multiple lines. The two are handled differently. To define a single-line function, the form is:

DEF functionname [(formal parameters)] = expression

Note that there's no FN in it; you can give any 'functionname' you wish, although only the first six characters will be significant. 'Formal parameters' simply hold a place for actual parameters that you must specify when you invoke the function.

Table 2: Graphics commands

Group	Statement/function	Comment
Output	GRAPHIC PRINT	Print given string at given point
	MAT FILL	Draw filled polygon from array data
	MAT MARKER	Plot markers from array data
	MAT PLOT	Draw empty polygon from array data
	PLOT	Connect a series of coordinate pairs with lines
Format	CHAR HEIGHT SET	As a percentage of the screen's Y dimension
	CHAR HEIGHT ASK	
	COLOR SET	Set foreground colour
	COLOR ASK	
	COLOR COUNT ASK	Determine number of available colours
	JUSTIFY SET/ASK	Print strings at selected horizontal and vertical offsets from cursor
	LINE STYLE SET/ASK	
	MARKER HEIGHT SET	
	MARKER HEIGHT ASK	
	MARKER TYPE SET	
	STYLE COUNT ASK	Get number of line styles available
	TEXT ANGLE SET	Degrees from
	TEXT ANGLE ASK	horizontal in radians
Viewing area	BOUNDS SET/ASK	Set aspect ratio
	DEVICE ASK	Get screen dimensions
	VIEWPORT SET	Establish area to be
	VIEWPORT ASK	used on device
	WINDOW SET/ASK	Establish the scale of X and Y
Input	GRAPHIC INPUT	Get X and Y from cursor position
Control	BEAM SET/ASK	Turn 'pen' on or off
	CLEAR	Clear screen, cursor to 0,0, beam off
	CLIP SET/ASK	Delete portions outside window
	GRAPHIC OPEN	Open for screen, printer, or plotter
	GRAPHIC CLOSE	Tidy up for next OPEN
	POSITION SET	Set 'pen' position
	POSITION ASK	Find 'pen' position

In this example, CALC.HYPOT is the name of the function; SIDE1 and SIDE2 are formal parameters. Note also the use of the backslash which allows one statement to be continued on more than one physical line, even though it is called a single-line function!

```
100 DEF CALC.HYPOT(SIDE1,SIDE2) = \
    SQR((SIDE1 * SIDE1) + (SIDE2 * SIDE2))
```

Multiple-line functions allow you to refer to an entire complex algorithm or even a set of data as a function. FEND is used to indicate the end of the function definition, which might look like the example below.

```
DEF AREA.CIR(DIA, MIN)
    REAL AREA.CIR, DIA, MIN, RAD
       IF DIA < MIN THEN \
RETURN \
       ELSE RAD = DIA / 2
AREA.CIR = 3.14159 * RAD ^ 2
FEND
```

The second line means: 'The variables AREA.CIR, DIA, MIN, and RAD are real numbers'. RETURN and FEND both send control back to the statement following a CALL statement; there can be any number of RETURN statements in a multiple-line definition, but only one final FEND.

The invoking of the function might look like this:

```
CALL AREA.CIR(42, MIN)
```

... where MIN is a previously-defined constant.

Compiling

The package contains three main components: the compiler, the link editor, and a library. The compiler accepts source code, usually file type .BAS, and generates relocatable object code with file type .REL. This is then applied to the link editor which combines it with other stock modules of code to generate an executable file, type .EXE.

All library files have the file type .L86. The file CB86.L86 contains modules to allocate and release memory, determine available memory space, and perform arithmetic operations and I/O processing — everything in fact which is required to support the language. That one is supplied, but you may add to the library your own modules of favourite subroutines and the like by using the library manager utility LIB86. It can display the current contents of the library, add or delete modules, select specific modules, create a new library file, append modules to existing files, and so on.

Error-handling

A large and comprehensive selection of error messages is provided — over 230 of them.

Fourteen different error messages alone are assigned to potential graphics compilation errors.

Some errors are self-correcting, too. For example, if a FOR loop header is found during compilation to have the TO missing, error 61 is reported — and a TO is inserted for you. Similarly, if you omitted a right parenthesis in a DIM statement, you'll get error 96 but the bracket will be put in.

Files

CBASIC supports both sequential files with variable record length and random access files with fixed lengths. Table 3 lists the statements and functions available.

Table 3: File Input and Output

Function	Comment
CREATE	Create a new empty file
OPEN	Open an existing file
CLOSE	Close specified file(s)
DELETE	De-activate from processing and erase from directory
SIZE	Return the number of 1KB blocks in file
RENAME	Change name during program execution
IF END	Signal end of file and transfer execution to specified label
READ #	Read data into specified variables
READ LINE	Read one complete record
PRINT #	Assign data to file from specified expressions
PRINT USING #	Output data to file using formatted printing options
GET	Read one byte
PUT	Write one byte

Instruction

Anyone who has ever used a Digital Research product doesn't need to be told that the instruction books are likely to be exhaustive and professionally-done (*Lindsay is the one person we know who says kind words about the GSX manual — Ed*). For CBASIC you receive a three-ring binder containing a 164-page language reference manual with glossary, a 76-page programming guide, and a 94-page graphics guide; all have an index. The graphics guide is perhaps not quite up to the standard of the other two.

In addition there are two READ.ME files which contain changes, updates, bug-fix announcements, and 'work-arounds' for certain unfixed bugs. It's refreshing to meet a company which not only admits that its product contains the odd insect but also lists them and tells you how to avoid them ...

Last words

With all the advantages that CBASIC Compiled offers, it is a wonder that it hasn't become the *de facto* standard in its field. It's certainly head and shoulders above badly-documented run-of-the-mill products like the MSBASIC bundled with Apricots.

The graphics functions and the high speed derived from compiled code are its most outstanding features.

The retail price is supposed to be £350, but dealers get it at a discount of 45 per cent for cash with order; and dealers are a lean and hungry breed these days, so a little gentle nudging might produce a discount. ◆

CBASIC Compiled

Description:	Compiler for extended Basic, available for Apricots under MS-DOS 2.11 or CP/M-86
Supplier:	Microsoft via Apricot plc — contact your local Apricot dealers
Price:	£350 (but see text)
Configuration:	any Apricot except F series
Conclusion:	Impressive

Review

MS-DOS 3.10 unveiled

UserPrompt's booklet

By Simon Potter

A couple of issues back we mentioned that the best available reference to MS-DOS 3.10 on the Apricot was probably IBM's manual — at a price not unadjacent to £100.

Well, we were wrong. The best 3.10 reference (probably the best in terms of usefulness, certainly the best value) actually costs just £4.25.

It's one of the *UserPrompt Guides* series from Chris Veys. There are nearly two dozen of these, all cheap (and cheaply produced). They are practical and highly pragmatic A5 pamphlet-style handbooks — the 3.10 *Guide* runs to 32 daisywheeled pages, for instance.

What you get

The *Guides* are intended to supplement the Apricot documentation, not to replace it. Unlike most so-called Apricot books, they aren't merely a rewrite of the official manuals and press releases either. In the case of the 3.10 *Guide*, the frontispiece says the booklet addresses two areas: "those you are likely to be having problems with due to poor documentation" (the writing style isn't all like that) and "tips and tricks that experience brings". And the thing reeks of hands-on experience.

There are basically five sections. You start with a plain-English summary of what MS-DOS 3.10 actually is and how computers use operating systems — for beginners, of course, but leavened with common sense like "there are rules about what characters are allowed in a filespec, but you will have no problems using alphabetic and numeric characters". He's right, you won't. This section ambles over directories as well, detailing the use of MD, CD, RD and moving/copying files between directories.

All good stuff. So is the section on CONFIG.SYS, which is meatier — you're told which Apricot manuals are relevant (and even which pages); then you get a guided tour of what can go into a CONFIG file (BUFFERS, COUNTRY, FILES, and the like) each item of which is neatly presented in a standard format ("why use?", "syntax", "advice"). This is clear, sane, and safe.

It's also sound — recommending RAMdisk for applications with overlays, for instance, and listing the international telephone dialling prefixes used for COUNTRY (seems Japan is omitted: Apricot says code 81 is supported, but it's not).

The bulk of the booklet is a section on internal commands, again in standard format: "why use?", "syntax", "example", usually a comment or a useful bug note and/or a tip. The tips are practical and useable: DEL won't delete invisible system files, PROMPT $ez will clear the screen and home the cursor (unlike CLS), use DIR *.* before DEL *.*, and so on.

Half a page is given over to a few notes about 3.10 and what's so different about it — needed for Point 32 networking, extra CONFIG.SYS commands, running programs in subdirectories, safer use of the FAT after file deletion, extra utilities, keeping up with the Jones' at IBM.

Then there's the other major section, on external commands: again the format is simple, clear and effective. This time there's also a handy comparison with equivalent IBM commands too. And to give you a flavour of the style, under "why use" for EDLIN you're told baldly: "Don't — use some genuine word processing software". The curious JOIN command, which sets up a subdirectory path as a physical drive ID, gets "why use? Can't imagine but there must be a use of it". We'll go along with that: does anyone out there know of a use for JOIN?

Last words

If this reads like sycophantic enthusiasm, I apologise. But (a) we have no particular axes to grind on UserPrompt's behalf: (b) it's pleasant to find a computer-industry product that represents real value: and (c) the information in this booklet is practical and accurate. It's also concise and economical. What more could you want?

We intend to look at more of the *UserPrompt Guides* in future issues. There are 22 of them on a variety of Apricot subjects — introducing and explaining individual machines (the titles on the Portable look particularly handy), using BATch files, WordStar and SuperCalc, Activity and Windows. They are £3.75 or £4.25 each, and that includes postage: at those prices, what can you lose? Get Chris's list of titles from UserPrompt Guides, 54 Stanhope Road, Swadlincote, Burton-on-Trent, Staffs DE11 9BQ. ◆

Review

Teach yourself computing

Two interactive tutors reviewed: Hands-On WordStar Hands-On SuperCalc

By Paul Langley

These two MicroCal packages are interactive training tutorials on disk. They're designed to teach a beginner from scratch how to use WordStar or SuperCalc, or to train more experienced users about advanced features of the respective package.

Hands-On WordStar uses 383K of disk space and *Hands-On SuperCalc* takes 423K, so both trainers are supplied on one double-sided or two single-sided disks. They will run on any Apricot hardware.

What you get

The overall strategy of both packages is to present an animated screen so the user thinks he or she is running the WordStar or SuperCalc packages themselves. Boxed windows superimpose instructions, comments, prompts, error messages and the like. You are taught a command or key sequence and then allowed to try it yourself; appropriate error messages and advice is given if mistakes are made, and you're invited to try again. The correct answer is given at any time if the question-mark key is pressed.

Both courses are split into 13 topics. The first two are standard — Topic 1 is 'Using This Trainer', a guide to the training package and the main keys used; Topic 2 is 'Basic Concepts', a general introduction to the main features of the package.

Hands-On WordStar topics

Getting Started
Basic Editing
Basic Text Entry
Introducing Menus
Formatting Text
Block Menus
Quick Commands
Dot Commands
Print Features
Opening Menu
Help Facilities

Hands-On SuperCalc topics

Getting Started
Building a Worksheet
Format Command
Copy and Replicate
Blank and Edit
Using Simple Formulae
Global Command
Insert-Delete-Move-Protect
Title lock and Window
Arithmetic Functions
Phasing and Output

On starting each trainer, you are prompted for your name so that a record can be kept on disk of the topics taken — when you start a subsequent session, the next topic in sequence is automatically selected.

Each topic takes 10 to 15 minutes to complete, including working through the exercises. It's possible to take the topics in any order by selecting them from a main menu, though by default they are taken in order from 1 through to 13.

The Space bar is used to select the next 'page' in sequence. The cursor keys control the session as follows:

left	REVIEW	go back to beginning of current topic
right	GO	next screen (same as Space bar)
down	END	terminate session
up	BROWSE	select new topic from menu

The programming is very clever — one actually believes the real package is running, and the responses to keypresses as far as validation and error messages is concerned is good.

The slow Apricot screen doesn't help though — there are some delays while screens are drawn. At least disk access is interleaved with screen display, which saves some time. Keyboard input is also slow: you have to be careful not to type too fast, otherwise the trainer misses characters.

One particular problem here applies to *Hands-On SuperCalc* when asking for input relating to moving the spreadsheet cursor around the screen. If the cursor arrow keys are pressed too quickly, the trainer thinks it is a REVIEW/GO/END/BROWSE combination and aborts the session. It would have been better (for both trainers) to use ESC or the function keys.

I tried both trainers with some of our secretarial and business students, both beginners and experienced users. The critical comments included these:

Hands-On WordStar:

- The screen can be very crowded, with the WordStar menu, user text and the training

package's commands and prompts all displayed at the same time — some users got confused

- The order of topics could be better — they are covered almost in reference manual order, but a beginner needs certain topics covered at an early stage. For example, printing and changing the logged drive are left until topics 11 and 12 respectively
- The key sequences taught are the machine-independent control keys (like ^S, ^D, ^A and their ilk in WordStar). Most computers, including Apricots, now have WordStar configured to more sensible keys and perhaps these should be taught as well. There is also a reference to the DEL key which doesn't exist on the Apricot keyboard
- There is no section on MailMerge or SpellStar, both of which would have been useful.

Hands-On SuperCalc:

- Each topic is split into several sub-topics. It would have been helpful to REVIEW a sub-topic rather than have to go back to the beginning of a topic
- Some of the trainer's comments and prompts referring to specific spreadsheet cells would have been easier to understand if pointer lines had been drawn on the screen
- The package is specifically for SuperCalc 1 — it's a pity that the SuperCalc 3 sort and graphics features are not covered
- Only two example spreadsheet models are used — a greater variety would have taught users about the SuperCalc commands and about designing models themselves

General criticisms:

- The user's name could have been used more frequently, particularly in exercises. This is good for positive feedback
- The documentation supplied with both trainers is a little thin — about 11 pages of instructions and example screens. The effectiveness of these trainers would be much greater with a small user guide for the package, summarising the main commands and key sequences — not a copy of the manufacturer's manual but a precis of it, perhaps. (Incidentally, additional 'Workbooks' are available for £7.50 each.)

Last words

Despite these caveats, many of which could be sorted out with a software update or two, the overall impression is very good — particularly for experienced users who want to brush up on features they hadn't already mastered. The material covered is taught very well and the general on-screen presentation is excellent.

The trainers can of course be used by as many people in the office as need to learn a package. As an alternative to a training book (cheap but not very effective with most business users on a teach-yourself basis) or a conventional training course (over £100 per day) the Hands-On packages must rate highly. ◆

Hands-On WordStar

Description:	Disk-based interactive training tutor for beginners and/or refresher course for more experienced users of WordStar — covers version 3.3 of the package
Supplier:	MicroCal Ltd
Address:	PO Box 561 Slough Berks SL3 9DP
Telephone:	0753 75991
Price:	£55 plus VAT
Configuration:	any Apricot including F series
Conclusion:	Fun and easy to use, effective, good value for money

Hands-On SuperCalc

Description:	Disk-based interactive training tutor for beginners and/or refresher course for more experienced users of the spreadsheet package — covers SuperCalc 1 only
Supplier:	MicroCal Ltd
Address:	PO Box 561 Slough Berks SL3 9DP
Telephone:	0753 75991
Price:	£55 plus VAT
Configuration:	any Apricot including F series
Conclusion:	Covers only SuperCalc 1, could do with more variety in models, doesn't provide enough to help you design your own models. But interesting, effective, and good value

Review

How smart can you get?

SmartPath reviewed

By Edward N. Bromhead

What can you say about a simple piece of software that is neatly packaged, modestly priced, and does everything it claims to do? You end up criticising it for what it *doesn't* do (even though it never claimed to) and writing a diatribe on something completely peripheral.

SmartPath from Caxton Software costs £45 plus VAT. For that you get a single floppy in an attractive folder with four pieces of paper: a license agreement, a licence registration card, an illustrated catalogue, and an eight-page A5 manual. In the manual, four pages are taken to explain how you get help from Caxton, and that you should backup the floppy and add BUFFERS=20 to CONFIG.SYS. If you can't manage this, there is a ready-to-use CONFIG.SYS file on the disk. Guess what it has in it ...

The problem

SmartPath itself is a 1,280-byte .COM file which sets up the default path for the overlays in an overlaid program in the same way as the PATH statement in MS-DOS sets up the path for .COM, .EXE and .BAT files. In short, it removes the restriction that PATH can apply only to executable files.

Many of the better-known programs are overlaid — dBaseII, WordStar, SuperCalc and SuperWriter among them. When you run an overlaid program you normally have to have the overlays in the current directory. Using the PATH command, you can get MS-DOS to chase up and down the directory tree (thinks: is that why the Unix equivalent to DIR is CAT?) looking for .COM and .EXE programs. But PATH isn't smart enough to know that the overlays are likely to be in the same (sub-)directory as the root program.

A solution

That's where SmartPath comes in: it modifies the way that MS-DOS looks for the overlays.

SmartPath does this without making an entry in the Environment, so that you cannot check what the current SPATH setting is. Because of this, you should run SmartPath from a batch file — for example:

```
SET SPATH=%1
PATH %1
SPATH %1
```

This way you can later check up on what you did, by issuing the SET command. Call this batch file something like XPATH, and run XPATH in the same way as you would use the PATH command.

SmartPath isn't going to be a lot of use to twin-floppy users: you can be in one subdirectory on drive A (holding program and overlays) and another on B (with data files) even using such things as WordStar. But SmartPath comes into its own on a hard-disk machine, where the two subdirectories are on the same disk and you don't want to use the floppy because it is comparatively slow.

This would normally demand that you work within a single subdirectory which has to hold not only all your data files and backups, but also the overlay files as well. (WS.COM doesn't *need* to be in this subdirectory because you can reach it wherever it is with PATH — but you might as well put it in, it's only one more file). Now with SmartPath, the OVL and OVR files can *also* be located anywhere on the disk.

And SmartPath won't help much if you are using more modern (and therefore probably non-overlaid) programs which understand the directory trees of MS-DOS 2.11. It's not perfect, either: what would be useful in SmartPath would be the facility to hunt up and down the directory tree for data files. That isn't there.

On the other hand, if you want to do what SmartPath lets you do, it must be a good buy — it works and it's so simple. And you can probably release quite a lot of hard disk space by not keeping multiple copies of overlay files in different subdirectories. ◆

SmartPath

Description:	PATH-type utility to allow program overlays to be located in subdirectories
Supplier:	Caxton Software Ltd
Address:	10-14 Bedford Street London WC2E 9HE
Telephone:	01-379 6502
Price:	£45 (or by mail order at £55.20 including VAT and P&P)
Configuration:	any Apricot, but would be most useful for hard-disk systems
Conclusion:	Smart idea — and could be seen as an alternative to Infosoft/OmrC's SpliT. Recommended for hard disk users

Deals For Readers

This is our mail-order section, exclusively for readers of APRICOT FILE. **In the** DEALS FOR READERS **lists you'll find ...**

- **public domain software,** mostly games and utilities that aren't easy to obtain elsewhere — and many of these are unique to APRICOT FILE
- **deals on software,** typically useful items that aren't widely available
- **demo disks** for packages that we regard as pretty good

Each issue has new entries and (occasionally) price changes. So keep looking!

How to order

Simple: just send us a note or a purchase order with the item's name and the reference number as quoted in the list. We will normally be able to process orders within two working days.

Note that for orders totalling less than £50 we can only accept prepayments and only in Sterling, so a cheque or money order (made out to "TP GROUP") *must* accompany your order.

We can accept purchase orders *only* from companies and other organisations, and *only* if you want goods totalling more than £50. But if it's at all possible we would prefer cash with order — we just aren't big enough to provide the effort of chasing invoices and to cover the shortfall between despatch and delivery.

The prices quoted include VAT where applicable and despatch. Your order will arrive with a VAT invoice/receipt.

Overseas orders

Orders from outside the British Isles are at the same price. Anything we send abroad is free of the VAT sales tax, and since that 15 per cent levy just about approximates to the extra cost of overseas postage we thought we might as well simplify things.

This may however mean that bulky items or long-distance despatch will go by the postage rate that most closely fits the 15 per cent allowance — and sea mail can be interminable. So if you want to ensure swift despatch, or if there's any doubt, ask us to quote ...

Contribute!

We're always looking for contributions to further £15 disks. So if you've written something — a game, a utility, a helpful batch file — why not share it with other readers? And if the ideas and techniques therein would make a useful mini-article for the newsletter, we'd certainly be interested in printing it.

Public Domain Disks

These disks contain public domain programs and text files which we have sorted, selected and tested. In many cases we have debugged, amended and documented the material too.

Public Domain Library

Order no:	**AP000**
Price:	**£5**

In response to popular demand — all the contents files for all our Public Domain disks for a fiver.

Apricot Disk No. 1

Order no:	**AP001**
Price:	**£15**

Over 40 files. Highlights now include:
AUTOEXEC with an improved prompt
SDIR and FDIR sorted-directory utilities
VDEL and DELQ selective DELetes
WAIT and ASK two batch file commands, more useful than PAUSE
GRAFCHAR define your own characters
ESCAPES list of Escape codes for Sirius and Apricot
OTHELLO good version of the board game
LEADTRAK and ACCTRACK two sales lead management systems.

Apricot Disk No. 2

Order no:	**AP002**
Price:	**£15**

Includes 79 files. Highlights:
ALTER and CHMOD change file attributes
BASICKEYS single-key entry of Basic commands
DEBUG the Apricot version
EPSON sets alternative print modes
KNEW copies only new files
MENU easy batch-file menu system
MOVE moves files from one subdirectory to another
RENDIR rename subdirectories
SORTDISK sorts directories
TREEDIR displays a DIRectory of all files on a disk — in their subdirectories
WHEREIS searches disk subdirectories for named file(s).

Apricot Disk No. 3

Order no:	**AP003**
Price:	**£15**

A bumper bundle. Highlights:
SWEEP all-purpose file housekeeper
SCAVEN finds and locks out bad sectors
MEMDUMP browse through memory
TURBOKEY key redefinition for aficionados of Turbo Pascal
SUPERWRITER XQT FILES a useful clutch of macros.

Apricot Disk No. 4

Order no:	**AP007**
Price:	**£15**

More indispensible tools and utilities. Highlights:
ASMGEN dissassembler
132-column screen configurator
Memory speed test benchmarks
Improved version of SETUP
DIARY year-planner
LABEL address label printer
BANNER prints fancy letterheads on daisywheel printer.

Apricot Disk No 5

Order no:	**AP009**
Price:	**£15**

A total of 38 files plus full documentation — includes John Lyth's imaginative MS-DOS menu front end, a suite of dBASE II programs to control your bank account, CHECKER to verify inputting in MSBASIC, DEBUG.PAS, a clutch of Spellbinder utilities, IBMBASIC (BASICA to MSBASIC converter) ... and much, much more!

GSX User's Disk

Order no: AP005
Price: £15

The complete GSX tutorial from Lindsay Doyle — includes a library of ready-to-use Basic subroutines that drive GSX, a set of five printable Workshops in text form, many graphics demo programs, and Lindsay's improved HEXPAWN game IMPHEX.

Games No. 1

Order no: AP004
Price: £15

Includes the very tough flight simulator 747SIM (fly your own Jumbo) plus old favourites like AWARI, TOWERS OF HANOI, and many more besides. A very full disk.

Games No. 2

Order no: AP006
Price: £15

Includes CLEWDO (solve the mystery), TRUCKER (get a cargo across the States on time), and some games for the younger Apricot user (SPELL and HANGMAN). Plus for the first time a GWBASIC version of STARTREK (noises and all) and BACKGAMMON. Some of these are unsuitable for F Series and Portables.

Games No. 3

Order no: AP008
Price: £15

Only two games on this disk, but both excellent and quite realistic entertainments. GREAT BRITAIN LTD is a political-economic simulation — be Prime Minister, balance the books, win the election if you can. And INHERITANCE is an interesting investment/gambling game; you could get hooked on both!

GWBASIC Games

Order no: AP010
Price: £15

A miscellany of graphics-based games, some old and some new (some borrowed and some blue) — including some special sound effects and graphics demos. Highlights: OPERATOR (try running a large mainframe computer system), hunt for oil with WILDCAT, depress yourself with NUKE-LA and ALIEN.

Chess

Order no: AP016
Price: £15

Only three games — but what games! For the first time on an Apricot, a challenging public domain chess game with superb hi-res graphics — even supports an 8087 if you have one. As an hors d'oeuvre we include a version of PACMAN, for dessert a golf game. A self-booting disk with a free bonus: the latest version of MS-DOS with BIOS 3.1. Not for F Series or Portables.

■■■ NEW ■■■

The dBASE II Disk

Order no: AP017
Price: £15

Full of dBASE II program suites. Includes programs to control membership records, a dBASE routine library, a label printing program, the ubiquitous mailling list program, a product tracking system, a form letter generator and sundry dBASE utilities.

Programmer's Disk 1

Order no: AP011
Price: £15

Our first disk for programming fans. Star attraction is a public domain implemenation of LISP Falled XLISP; plus fifteen Turbo Pascal routines and utilities, a C cross referencer, an MS-BASIC programmers' toolbox, a program line indenter and useful batch file utilities.

Programmer's Disk 2

Order no: AP012
Price: £15

Features BSU, a program to unprotect protected MSBASIC programs; plus Ron Cain's Small C compiler, a trio of cross-referencers for Basic and C, an ASCII-to-Hex converter, a GWBASIC core dumper, the appendix that Microsoft omitted from the MACRO-86 manual, and a C source code checker.

Lotus 1-2-3 Disk No 1

Order no: AP013
Price: £15

No less than 25 WKS templates for 1-2-3, including the Asterix suite of business worksheets, and the macro library MACLIB.WKS.

Lotus 1-2-3 Disk No 2

Order no: AP014
Price: £15

A heap of technical notes and external utilities for 1-2-3 plus seven WKS files including an address label macro and PRNTMENU.WKS to manipulate your Epson printer.

PC File III

Order no: AP015
Price: £15

Our first Public Domain application program — an Apricot version of the well-known general-purpose database/filing package. Menu-driven, great documentation (over 100K of it on the disk), superb power and speed, very easy to use; handles everything from mailing labels to multi-page reports. Exchange data with 1-2-3, MailMerge, many other WP and spreadsheet programs. Indexing on all fields, searches includes 'soundex', multiple selection criteria ... Complete with the latest IBM emulator (which is required).

Demo Disks

Try before you buy? Here's your opportunity to check out our selection of some of the packages we rate highly — and to do so without a salesman hassling you to write a cheque for them. (Demo disks are usually the complete package with restrictions on volumes and/or output.)

BusiPost

Order no: AD002
Price: £15

British mailing list package — fast and flexible. Not available for the Apricot F Series and Portables.

Letterer-Set

Order no: AD005
Price: £15

Utility that lets you print on any dot-matrix printer any typeface that can be displayed on your Apricot screen.

MENUGEN

Order no: AD007
Price: £15

Here at last! A demo for this fine menu-creation utility — menu selections can run programs, call other menus, execute MS-DOS commands, etc.

MicroSight

Order no: AD008
Price: £15

Everything you need for digitising an image and several facilities for manipulating it.

PC Programmer

Order no:	AD009
Price:	£15

Program generator that lets you produce complex applications software with minimal effort and no need to learn a programming language.

Praxis MicroChart Plus

Order no:	AD010
Price:	£15

All-British business graphics package, ideal for presentation of spreadsheet data etc. Not available for the Apricot F Series and Portables.

Cardbox Plus

Order no:	AD011
Price:	£15

Particularly good demo for one of the best 'flat-file' records-keeping packages. Not available for the Apricot F Series and Portables.

Special software

These are not public domain items, and they are not discount deals on the kind of software your dealer will sell you. Instead we have gathered a few titles that (a) we feel will be useful to the average Apricot user and (b) you won't find easily — or at all! — anywhere else.

FAST

Order no:	AS001
Price:	£25

FAST is an accelerator for the Apricot screen: it bypasses certain screen interrupts. Simply running it in an AUTOEXEC.BAT will cause your Apricot to handle screen text up to twice as quickly. FAST doesn't affect CPU clock speeds and so it does not accelerate your graphics or supercharge your program execution times. But its effect on screen performance is pretty impressive.

FAST is very compact, less than 650 bytes; and it's modest price reflects that. For the money you won't find any better way of speeding up an Apricot with a single-line AUTOEXEC command. Not available for the Apricot F Series and Portables.

Polyprint

Order no:	AS003
Price:	£30

Pretty printing from your Apricot on any matrix printer — POLYPRINT lets you produce near-letter-quality printing (almost typesetting quality, in fact) on ordinary dot-matrix printers that are capable of printing graphics (which these days means just about any low-cost matrix printer). Menu-driven, uses only nine keys. Comes with 12 selectable typefaces, some of them very fancy. Accepts ready-to-print output from any word processor; will also work directly from WordStar files without your having to save them on disk first. You must specify which printer you have when ordering — POLYPRINT comes customised for particular printers.

Polyprint Plus

Order no:	AS021
Price:	£20

For existing POLYPRINT users only: 13 new typefaces and additional facilities including the new capability of mixing typefaces in the middle of a document.

The Apricot Catalogue

Order no:	AS004 [ASCII]
Order no:	AS005 [Cardbox]
Price:	£50

A list of all the software and hardware we know of for the Apricot with prices, addresses, description (with our comments when we have experience of the package), contact names and numbers (including Telex numbers) where we know them. Regularly updated by us; currently well over a megabyte of information on six disks. The ASCII format can be read by most word processors or simply TYPEd, the Cardbox format can be read by Cardbox Plus and comes with a .FRM format (but not with the file manager program itself).

A.S.D.

Order no:	AS006
Price:	£57.50

Formerly known as P.A.S.D.: this is the latest (and much improved) version of the first (and only?) independently-produced package of upgrades to and tools for SuperWriter. A packed disk, and a good piece of work. Highlights:

- two-column formatting and print
- expansion, improvements, correction for the dictionary
- full documentation of SW.DEF plus a collection of useful formats
- improved (and more legible) display font
- keyboard configuration presets to speed up keying
- many XQT files to accelerate and simplify your routine work
- several batch files for disk housekeeping.

AnsibleIndex

Order no:	AS022
Price:	£86.50

Sophisticated SuperWriter indexing utility, even permits indexing of subjects and themes. Can handle documents chained across more than one disk, too. Only requires two marks per index item.

AnsiblePatch

Order no:	AS023
Price:	£15

Patches SuperWriter to improve the legibility of displayed text on F series Apricots and Portables.

IANKEY Crash Course

Order no:	AS007
Price:	£48

The very best keyboard tutor we've seen for newcomers — beats TOUCH 'N' GO into a cocked hat. Sensible design based on serious research; clear on-screen instructions; takes only three or four hours to teach the basics of touch-typing. Our review concluded "I strongly recommend it as excellent value for money" — especially from DEALS FOR READERS, because the normal RRP with VAT and P&P is £58.65.

IANKEY Two-Fingers to Touch-Typing

Order no:	AS008
Price:	£48

An alternative keyboard tutor — converts a two-fingered 'hunt and peck' typist into a fast user; and it does so without wasting your time, forcing you to relearn the keyboard, or boring you stiff. Included in the enthusiastic review conclusions, and again available from us at a price £10 below RRP.

FORTRAN Utilities

Order no:	AS009
Price:	£50

A collection of assembler utilities for MS-FORTRAN applications, complete with test programs and link instructions. Now features direct access to system calls and an interfaces to GSX. Also includes:

- set date and time
- current date and time
- get/change default drive
- delete/rename disk file
- read/get character from keyboard buffer
- print characters on printer

SSDISK

Order no:	AS024
Price:	£15

Fed up with the inadequate RAMdisk software that came with your Apricot? S&S has produced a RAMdisk which is configurable up to a full 896KB with 128 directory entries per 'drive'.

DO-TO-ALL

Order no:	AS010
Price:	£15

Handy for hard disk users and anyone with multiple subdirectories: DO-TO-ALL lets you issue just one command that is to be applied to all directories — to delete all BAK files in your subdirectories, for instance.

The File Protect Pack

Order no:	AS018
Price:	£60

SECRET makes files invisible (or visible again) to DIRectory searches, READONLY sets the attribute bit so that they can't be deleted or overwritten, ENCRYPT encrypts and decrypts files according to your password, ZAP deletes them so thoroughly they can't be 'undeleted' at all.

UNDELETE

Order no:	AS020
Price:	£20

The essential brow-soother — will attempt to recover files that have accidentally been DELeted, and does so with gratifying frequency. Not for hard disk systems, though.

SPLIT Disk Partitioner

Order no:	AS021
Price:	£56

Infosoft's clever disk partitioning utility for Xi hard disk Apricots — lets you 'partition' the hard disk so that it looks like up to 24 separate disks, each with a drive identifier and each with a size you specify. Thereafter the 'drives' can be treated as if they were real ones for reading, writing, copying, renaming, deleting files etc.

The FTU

Order no:	AS011
Price:	£125

The best file transfer package we know of; we use it all the time, and that's not just because it's written by Friedman. A complete kit that enables you to transfer files between the three most popular machines — IBM PC, Apricot, and Victor/Sirius. Includes software for all three, and an 'intelligent' RS232 cable that will configure itself correctly for connection between any two of the computers. Our price is over £50 below RRP!

MXDUMP

Order no:	AS012
Price:	£75

Another classy little number from the programming pen of Friedman — produces exact screen dumps from your Apricot display on a standard Epson MX dot-matrix printer. Once loaded it sits quietly in MS-DOS waiting for you to call it (with a single keystroke). Lots of options: specify text or high-resolution graphics, normal or bold, standard-or double-width: and more ...

The Lotus Pack

Order no:	AS013
Price:	£65

Useful utilities from S&S Enterprises for Lotus users:

- THEPOUND lets you use all the displayable Apricot characters in worksheets — including the pound sign
- SOLID123 consolidates several 1-2-3 or Symphony worksheets into a total
- TRANSPOS transposes rows and columns
- 123RANGE lists worksheet ranges

The Printer Pack

Order no:	AS015
Price:	£40

Mainly for Epson-compatibles, mainly for spreadsheets:

- SIDELINE prints worksheets sideways so that wide spreadsheets fit on to the paper
- FXPOUND prints the pound sign on FX-type printers
- SETFXPR provides a set-up menu for printer functions

The WP Pack

Order no:	AS016
Price:	£50

Four handy S&S utilities for word processing:

- WSASCII converts WordStar files to ASCII format so that they can be read by other word processor
- WORDNO word counter
- READAGE calculates the reading age (ie the comprehensibility) of text
- SEARCH searches text for given phrase

The First-Aid Kit

Order no:	AS017
Price:	£25

Just what you need to make your computer more palatable to novice uses — the DOSMENU front-end option-choice menu and the HELP dial-an-explanation facility

The Games Box

Order no:	AS019
Price:	£25

Two games from Alan Solomon: ADVENTURE is the original 'Colossal Cave', CASH CRISIS is 'Space Invaders' with money

Other extras

Good Computing Book

Order no:	AB001
Price:	£3.00

A tubby and packed paperback for beginners. Mostly a reference dictionary of computing terms, but also lots of introductory info. Claims to offer "everything you need to know and nothing you don't".

Expansion Memory

256KB	AH002
	£130
512KB	AH003
	£185

High-quality add-in memory cards from a well-known manufacturer at prices we think you'll find hard to beat — bearing in mind that they include VAT and despatch. The 512K board is particularly good value, perfect for RAM disks and big SuperCalc worksheets. But both boards are socketed, so if you can get the chips you can populate the board up to the 512KB maximum yourself.

All prices include VAT and despatch. Send your order with payment to:

APRICOT FILE
TP Group
PO Box 509
London N1 1YL
England

Queries: 01-833 3501

Cheques should be made payable to TP GROUP.

We aim to despatch within 48 hours, but please allow 21 days for delivery before calling to complain ...

Note that we can only accept payments IN STERLING, that we must have PREPAYMENT except for official Purchase Orders, and that PURCHASE ORDERS can only be accepted for orders totalling £50 or more.

Free Small Ads

This Classified Ads section is free to APRICOT FILE subscribers. Just let us have a sheet of paper with the words. To summarise the requirements:

- **indicate which classification you'd like it to appear**
- **don't forget to include an address and/or phone number (we won't be operating a box number service)**
- **please try to limit yourself to 50 words or less**
- **let us know when you want the ad removed from the list!**

Send your ad to:

APRICOT FILE
P O BOX 509
LONDON N1 1YL

Jobs

■■■ DEPUTY EDITOR REQUIRED FOR APRICOT FILE: Dennis is getting involved with new newsletters now that this one is established. Anyone interested in a full-time job (modest salary plus profit-sharing and a lot of fun) should write to him at our address.

Holidays

■■■ HOUSE TO LET in the South of France (at Agde, on the Meditteranean coast but well away from the tourists). Attractively converted 17th Century house with courtyard and roof terrace: sleeps 4-5. Local British management. July £200-£250 per week, September £125pw. Phone 01-352 5925 evenings.

Help

■■■ HELP FOR F1/F2/FP USERS: Gateway Users Group is new and exists solely for users of these machines. Details from Tony Hill at 85 Edna Road, Raynes Park, London SW20 8BS.

■■■ BIRMINGHAM AREA: any users of Apricot computers interested in forming a User Group for the exchange of ideas, software, etc please contact H Cohen on 021-454 2563 (evenings only) or write to 3 Fairlawn, Westbourne Road, Edgbaston, Birmingham B15 3TL.

■■■ 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 — phone 01/715 10 94.

■■■ HELP GROUP: Apricot users within striking distance of Reading, Berkshire, and interested in forming a friendly group to give and receive help on programming, communications, software packages and anything else legal are invited to contact David Holland on Reading (0734) 68860 — evenings only.

Sales

■■■ XEN multi-user system with two 256KB Apricot PCs and Oki Microline 193 printer plus Delta 4 (networked), SuperWriter, SuperCalc. Cost £9,000 in March, will accept £5,750 now. A first-class system, but unfortunately the business did not materialise ... Details from 031-445 2218.

■■■ APRICOT INTERNAL MODEM with MicroMail software. £130 ono, or swap for 8087 co-processor. Contact Mick Kelly on 0603 610584.

■■■ 9in APRICOT MONITOR green screen, black case, includes carrying case. As new, used only on Sundays, etc. Price £100. Contact Paul Lavin on 01-451 1951.

■■■ CARDBOX electronic card index system: no longer required, £75. Also once-used Apricot single-sided disks: boxed in 10s, £17.50 per box. Phone 041-332 2505.

■■■ TYPEWRITER/PRINTER (Olivetti ET121) with serial interface. Can be used as printer for computer as well as conventional typewriter — currently used with a BBC Model B, but never mind that! 17in carriage, excellent condition, several different daisywheels and coloured ribbons available. Helpful advice on its use can also be provided ... Best offer secures. Contact Mike Penny on 0594 516207.

Wants

■■■ CHEAP TURBO PASCAL WANTED by student, to help with studies. Write to Martin Norman at 6 Faraday Street, Middlesborough.

■■■ LOAN OF PORTABLE DISKS WANTED — Dixons muddled up the disks I should have received, say there's two months delay on replacement, and have certainly omitted at least the Voice disk. Can anyone help? Contact Paul Anderson, 01-868 4499 ext 263 (office hours) or 02518 3470 (evenings).

■■■ DR LOGO — can anyone alter DR LOGO for the F1/F1e to run on the F2? I have tried Apricot dealers without success and the long-promised £30 DR pack still hasn't materialised. Contact David Stirling at 28 Ingleston Avenue, Dunipace, Denny, Scotland.

■■■ MOUSE WANTED for Apricot F1. Serial mouse preferred, but willing to consider infra-red Apricot mouse if cheap. Contact Dr Cartwright, tel 045 383 4576.

■■■ DATABASE/FILING PACKAGE (Palantir or Cardbox preferred) and A.S.D. Superwriter disk. Exchange IANKEY touch-typing tutor, GRAMMATIK grammar checker, PROOFREADER spelling checker (full working copies with documentation) — cash difference either way. Phone 095 786 261.

Contribute!

■■■ HELP WANTED BY APRICOT FILE — we need a clever assembler programmer with a Xen to write a short routine that slows down the screen display. All our games for the 8086 Apricots just zip by too quickly! Contact Roger Gann on 01-833 3501.

■■■ HELP WANTED BY APRICOT FILE — and another one: we have an excellent Chess game on the Apricot PC which needs converting to run with F1/Portable graphics ... Contact Roger Gann on 01-833 3501.

■■■ HELP WANTED BY APRICOT FILE — we have some good Sirius comms programs that need a little tweaking before they'll run on the Apricots (serial port addresses etc) ... Contact Roger Gann on 01-833 3501. ◆

Readers' Writes

Subscribers have their say ...

Public Domain bugs — and more

I have to say that I am highly delighted with the DEALS FOR READERS Public Domain disks. On the whole the quality is excellent and, after several weeks, I am still working my way through them. There are odd errors, but congratulations are still very much due to the person(s) who put these disks together.

Though I find the utilities the most useful, I would be very much interested if you were to do any compilations of learning programs for children, from 4 years upwards.

One tiny mistake is the Character Set for Hangman on AP006: SETALFA should be run first, not SETGRAF. Also the score is not calculated correctly in PONTOON.

I find your technical topics very useful. Perhaps I could suggest the following for future issues:

- a history of MS-DOS implementation on Apricot, what different releases were for (ditto with BIOS versions), explanation of main elements with diagrams showing positions in memory, why different sizes of operating system apply for different Apricots, the newer versions on Xen and Networks and what to expect in the future
- Batch files and commands for them
- Editing keyboards, fonts and logos: how to make up your own and how to use them, both outside and inside programs
- XENIX — how it works in practice on the Xen
- Use of screen RAM in Basic and Pascal programs for direct manipulation of the screen as opposed to Escape sequences (on the latter point, I notice that some of the Escape sequences for keyboard input — like ESC £ and ESC % — do not work. Do you know of equivalents that do?)

Mr Cornelius's letter regarding his use of the single-dot notation for the current directory is most odd. I am not sure if the letter was misprinted or he got it wrong himself. He says that if you establish yourself in the target directory \SCALC3, you can use the single-dot notation in the following way:

```
COPY SC*.* .
```

The first mistake in this copy instruction is that the COPY command will look for the files SC*.* in the current directory. From Mr Cornelius's letter, these files are apparently in the root directory. They will therefore not be found unless the pathname for the root is included — for example:

```
COPY \SC*.* .
```

This copy will work: but so will the same instruction omitting the dot — with exactly the same result, copying the files SC*.* from the root to the current directory!

The only use I have found for the dot notation is copying files from one directory to its parent, for instance to copy *.LET files from \SW\DOC to \SW:

```
CD \SW\DOC
COPY *.LET ..
```

Here the pair of dots indicates the parent directory.

David Langford's articles are highly entertaining but always with very useful tips and a great deal of common sense. The 'Tiny COM files' article in February was very stimulating — any chance of more? One of my pet headaches is passing command line parameters to Basic programs: can this be done with a tiny COM file?

The procedure to change SuperWriter dates from American format to British in the April issue prompted me to try it with SuperCalc 3. I found the byte sequence for the 'Get Date' function call, but could go no further. I would like to make this change to be able to date-stamp calculation printouts in British format. We produce costings for non-standard products with SuperCalc and the American format is so confusing for our non-computer colleagues that I have to leave it out altogether. I'm really asking if you could give me the fix for SuperCalc 3, please ...

Robert I Smith
Shapland & Petter, Barnstaple

AP006 has now been fixed. We don't come across many programs for kids, though we have just taken delivery of a batch of IBM-format public domain disks from the States and there may be some convertible material among that lot. Would anyone care to put together a parcel of such material, perhaps converted from Commodore or BBC B formats? We'll trade public domain disks for the effort ...

Keep the ideas coming — it's all grist to the mill. Back in 16 BIT COMPUTING days we did run a History of the Apricot BIOS, but perhaps it's time for an update: there are some notes in Paul Lavin's NEC V30 review in this issue, anyhow.

Batch file workshops are planned, as is a piece on logo and font editing. Lindsay wrote

a good piece for one of the last issues of 16 BIT COMPUTING on FONTEDIT that may be worth reprinting: any comments?

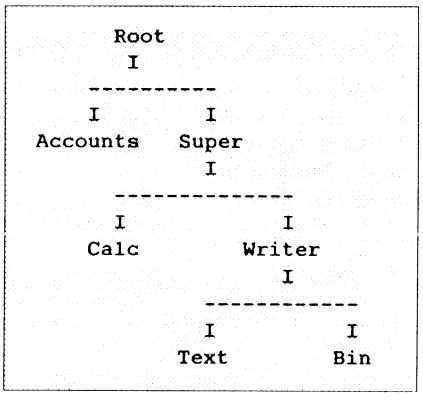
As for Xenix, this too is planned but we're waiting until there is some hard user experience with it. Most Xens are running MS-DOS 3.1 right now.

We're looking into that SuperCalc patch. Translation: David has been asked for a fix.

That dot again

I have to agree with Barry Cornelius in *Readers Writes* (Release 1.7) on the value of the dot abbreviation — though his example is unfortunate in that the use of the dot involves one more keystroke than the 'long' alternative.

I have discovered that the dot can be of great use when navigating subdirectories. Take this tree:



To change from the \SUPER\WRITER directory to the \BIN subdirectory would involve the command CD\SUPER\WRITER\BIN — but by using the dot this can be shortened to CD .\BIN. In the same manner a directory search of \BIN is achieved with DIR .\BIN.

T J Mitchell

Fun with Fortran

We have had hanging Apricot problems with Fortran, and your suggestions in last issue's Q&A probably explain why. A few minutes with your test program and two compilers gave us the following results:

MS FORTRAN	
Apricot PC	hangs
Xen FD	hangs
Xen CD	hangs
IBM AT	ok (gives 0)
IBM XT	ok (gives 0)

LAHEY FORTRAN 77L	
Apricot PC	hangs
Xen FD	hangs
Xen CD	hangs
IBM AT	fails, underflow error
IBM XT	fails, underflow error

If you think it would help, I would be only too happy to alter the status and control words as recommended ... if only I knew what they were. Can you be a little more specific?

Mike Beeson
Mountford & Laxon Co

Comments in the next issue.

Bugs in BIOS 3.1

As a recent subscriber I should like to say that I am delighted with the newsletter after groping in the dark for a year re-inventing wheels.

I have not yet seen reference to any bugs in BIOS 3.1, and I wonder if we've found one. My company has a diasywheel with an RS232 interface which we use occasionally for posh printing: it works well under BIOS 2.7 but would not handshake properly if we boot up with 3.1. Utilities confirmed that the serial port was set correctly.

You can imagine the hours (days!) of frustration that our dealer and I spent with breakout boxes and bits of cable — Apricot plc denied that any fault existed. But what seems to happen is that under BIOS 3.1 the setup information stored on disk is not fully implemented on boot-up: the port is configured correctly for baud rate, but the RTS/DTR information is ignored.

The problem has been solved by including this Basic program in the AUTOEXEC.BAT file:

```
1   'Set RTS (COM=12) and DTR
    (COM=13)
10  DEFINT A-Z: DEF SEG=&H60:
    IO=0: DEV=52: COM=0:
    DAT=0: RET=0
20  DAT=1: COM=12: GOSUB 100:
    COM=13: GOSUB 100: COM=3:
    DAT=0: GOSUB 100
30  SYSTEM
100 CALL IO(DEV,COM,DAT,RET):
    RETURN
```

Should this be necessary? Has anyone else had this problem?

I also found that FONTEDIT and KEYEDIT (which I prefer to the ACTIVITY utilities) can produce a display under BIOS 3.1 which is, to say the least, bizarre. The problem here was solved by pressing CONTROL-CLEAR, which homes the cursor without a prompt displayed. Now KEYEDIT or FONTEDIT can be entered and the display is ok.

David Langford's article in Release 1.7 about changing the date format in SuperWriter spurred me into doing something similar to SDIR.COM. To switch the month and day of the displayed date, the bytes to change are 7EE (change from '47' to '4A') and 7F8 (*vice versa*: change from '4A' to '47'.

The individual file dates are decoded in rather more complex fashion. Start at byte A6B and use E-for-edit to replace the existing contents with the following values:

```
1F 00 D4 0A 0D
30 30 90 80 FC 30 75 02
B4 20 E8 32 00 90 B2 2F
B4 02 CD 21 58 50 25 E0
01 B1 05 D3 E8 90 90 90
90 90 90 90 90 90
```

The last byte altered is A95. My patch is much shorter than the original — it uses many NOP ("90") codes — but it must be entered as above.

Chris Chipperfield
Bourne, Lincs

We can't comment on the RS232 problem: has anyone else encountered the difficulty? Is there a cleaner and/or more permanent fix? ◆

Postscript to SmartPath

Re. our review of **SmartPath** — Caxton says that if you are working Smarter than they are, you can have a copy of *all* of their software free. Well, here's a SmartStart to handle overlays via one entry in CONFIG.SYS and a batch file.

Take WordStar as an example. Create a RAMdisk, drive C say. Copy all the WordStar files and overlays to it, and run WordStar from C — data files can be on any subdirectory on A provided you change to that directory on A before entering WordStar. (In the case of WordStar, you need to re-install it so that it looks for its overlay files on C). If you don't have enough memory, buy some more (from DEALS FOR READERS?). The extra RAM may cost three to four times as much as SmartPath, but it will be 30 to 40 times more useful in the long run — and it will make the program run still faster.

Unprotected Communiqué

Apricot has quietly announced an instant upgrade for **Communiqué** that provides an unprotected (copyable) system for 300/1200bps comms. Dealers don't seem to know about it yet, but in theory you can provide your master disks and a tenner to get the upgrade.

Laser boom ...

Frost & Sullivan reckons that the US market for non-impact printers — primarily **laser printers** — will grow from $543 million in 1985 through a massive **$1.4 billion** this year to something like $3 billion in 1987. Thermal and inkjet printers are hampered by poor print quality, special paper and "odors *(sic)* associated with them": but laser printers "offer near-letter-quality at speeds up to 20 to 30 times that of daisywheels, at 60 per cent of the daisywheel noise level". F&S also dumps on the idea of cheap laser printers, forecasting a price decline of less than 10 per cent a year on average.

... Cheap laser printer

But **Pragma** is the company that appears to have sewn up UK distribution for the QMS KISS, a sub-£2,250 laser printer that looks only slightly less well-specified than the Canon/HP alternatives. Print speed of 400 cps produces six pages a minute against the Canon's eight; resolution is the same at 300x300 dots per inch. There's 80KB for downloading fonts and 12 are supplied; KISS also has an 8K print buffer, IBM-compatible Centronics interface (RS232 optional), and compatibility with "any" software that currently supports Epson FX-80, Diablo 630 or Qume Sprint. We don't know anything about the graphics capability, but probably more important is Pragma's bargain-price offer of just **£1,368** for orders received before the end of June — details from **0923 720326**.

DataMaster updated

The enthusiastically promoted **DataMaster** database manager from Sapphire Systems has been "significantly enhanced" in a new version renamed **DataEase**. Apricot implementations are promised; more functions and "a new procedural language that doesn't require programming knowledge" are featured. More from **01-554 0582**.

Orchard flowers

Orchard Business Systems, one of the best established and definitely one of the most professional of software suppliers specialising in accountancy packages (a thousand users in three years — 80 per cent of them on Apricots), has set up a network of 'Orchard Business Centres'. Described as 'partnerships', these are existing dealers prepared to put a bit of effort into specialising on Orchard software. Info from **0403 64474**.

In-car entertainment

Electronic mail purveyor **One-to-One** has announced support (and a special dial-up number) for the **Transam M1** in-car modem. It's compatible with Cellnet and Vodaphone systems.

Read all about it

Subscribers to the **Telecom Gold** electronic mail service (and Apricot's **Micromail** front-end to it) can now spend an additional £1 a minute accessing Datasolve's **World Reporter** news and information service. Formerly available only to direct subscribers, the service includes 'reprints' from two magazines (*Economist*, *New Scientist*), three newspapers (*Guardian*, *Financial Times*, *Washington Post*), three news agencies (Associated Press, Tass, Japan's Asahi), *Keesing's Contemporary Archives*, and the BBC's news service. You don't have to read everything — there are search-and-select facilities.

Cheap multi-user upgrade

BOS Software, which recently proclaimed the superiority of its multi-user applications on the Xen, has introduced a pricing structure intended to encourage single users to migrate. A two-user system is now £650 per module rather than £950. Rush to call **01-831 8811**. On the Xen BOS says says it can provide a multi-user system at two-thirds the price of the official Xenix alternatives — and can support twice as many users in the same memory.

Delta for insurance brokers

Compsoft is doing a customised insurance brokers' version of its **Delta 4** file manager for the basic system's **£495** price. More vertical implementations are promised; Compsoft is on **04868 25925**.

Apricot does it again

You would think that one row a year with a major US software house would be enough for the boys in Brum. Rumour has it that Innovative Software, the people who produce the very smart Smart integrated package (due for imminent review, as it happens), were (a) refused the loan of a Xen and (b) not told about the management buy/sell out of Apricot Inc while negotiations were still in progress in the States. Naturally they were miffed enough to follow the example of Computer Associates (*aka* Sorcim) and scrub all future sales to Apricot ... and to Apricot users. So one of the best spreadsheet packages since Supercalc 3 Release 2 — also unavailable for the Apricot for much the same reasons — will not be provided in Apricot format any more. At least Innovative says it will continue to support the existing user base. ◆