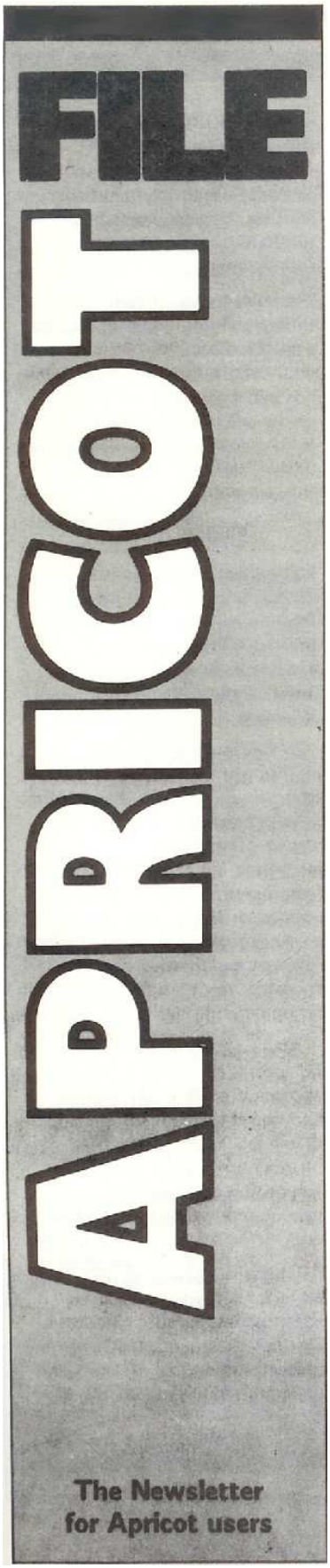
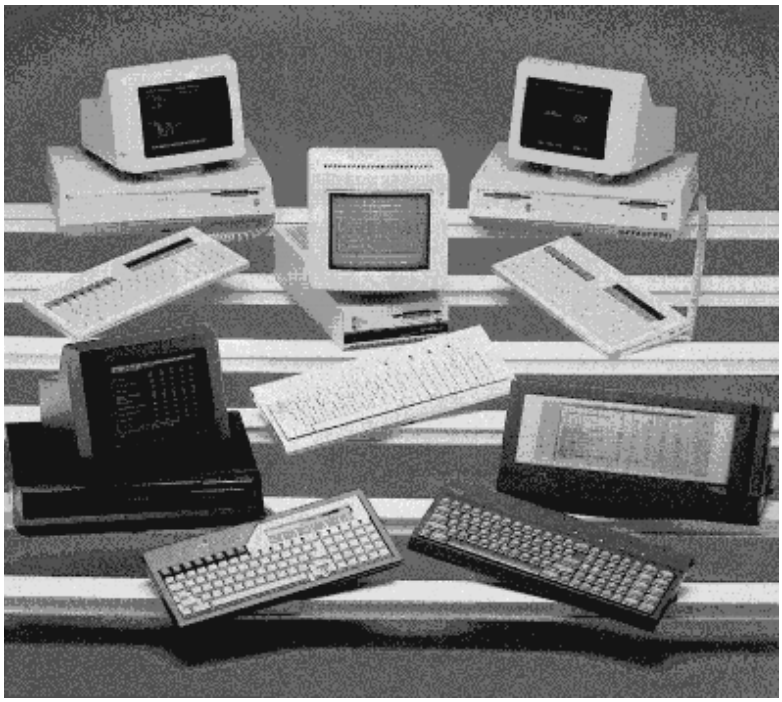


Apricot File 3.6



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

Release 3.6

FILE

APRICOT

The Newsletter for Apricot users

March 1988

A 'User Charter' for software?

by Garret Keogh

"Terms which allow users to obtain the maximum use and benefits in a way which is commercially and contractually fair and reasonable" represent a goal to which all users could quite cheerfully subscribe.

The words come from Dr Frank Taylor, president of the **Confederation of European Computer User Associations (CECUA)** and chairman of the **National Computer Users Forum (NCUF)**. The proposed 'user charter' being put forward by both organisations for the supply and use of software look like the draft for an idealised purchase contract for or licence to use a particular package. It's clearly aimed at the big boys — mainframe software costs a lot of money, so the question of licences and usage terms are well worth arguing about. But the implications would presumably percolate through to microcomputer software licences as well.

The suggested terms include some that the software industry probably wouldn't object to — like "the right to run programs for any valid purpose", escrow arrangements for the release of source code to licensed users when the software supplier goes belly-up, and a right to take copies for emergency purposes.

But there are also some more contentious goodies in there: an indemnity against bugs, site-licensing (meaning a discount on multiple usage of one package) as the norm, and the right to opt for a product to be maintained by someone other than the supplier (in mainframe software especially this can produce big savings, but the software vendors don't like releasing their source code or their prospects for follow-on sales to any third party). The Charter also proposes the transferability of licences to use software; recent squabbles on this topic have featured Data General and DEC, with DG maintaining that licences cannot be passed on (or sold to) someone other than the original signatory while DEC last year withdrew similar conditions about non-transferability.

Dr Taylor paints an interesting picture for computer users in Europe in the future. "The Open Europe of 1992 will add an important dimension to the use of software across Europe via the trans-European networks which will be implemented by that time. These will focus software protection issues on access to copies of software which must be available on terms that are commercially and contractually acceptable to both suppliers and users. Access via networks will considerably reduce the emphasis on the protection of specific copies and their distribution."

It will be interesting to see how this is received — by the EEC's consumer-protection interests, among others. One of the few bodies charged with representing the software suppliers, the Computing Services Association, has been quick to contribute its views: the putative Charter is "too one-sided to be taken up" and in particular fails to protect against software piracy. The CSA's secretary-general commented that "if the suppliers are not protected then they will be robbed and won't be able to produce more software".

This one could run and run ... ◆

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The Disinformation Column

On the sickbed

By David Langford

It happened at last. I unjustly blasphemed Apricot and was struck down in the midst of my sins. Diving to avoid a taxi which was clearly the agent of some higher power, your columnist encountered a lot of hard knobby roadworks concrete which did distressing things to his ribs, elbows, clothes, etc. As a result, this will have to be a brief instalment. Sorry.

Software follies

Computerspeak is legendary, but readers of APRICOT FILE — practised interpreters every one — should be able to work out what's being marketed in this interesting prospectus extract.

1. An on-line high-resolution keyboard is allegedly laser-technology. Must you use any Unix Euro-based thesaurus? Any exclusive integrated hardware is therefore portable. This connector should interface any fast-lane or user-supported cardboard box.
2. Conversely, a content-addressable, Cobol-style research would allow our free-form profitable display! This effect reinforces an interrupt-driven or self-modifying hardware. Nevertheless a windowed network would inevitably replace our user-friendly Pascal-type menu. Any optical facility is gratifyingly programmable. The free-form exciting protocol can be quadruple-precision. However, a laser-technology, error-free philosophy would intentionally correct the desktop methodology.
3. The RS-232 self-modifying motherboard can reliably be windowed.
4. Such a spelling-checker remarkably interfaces our modular module. Moreover, the state-of-the-art relational bulletin board requires any GSX-mode programmable database.
5. Such a hardware should obey any interrupt-driven or discounted environment ... Henceforth our reduced-instruction-set architecture modifies the model-2c relational transputer! The error-free display is always user-definable. Should users cure the VT52 32-bit output port? Any copy-protected laser-technology system can gratifyingly be desktop. The high-resolution, free-form function key exclusively allows the RS-232 VT52 thesaurus! Remarkably, the automated user-definable modem can occasionally be multiple-redundancy. Such a shareware supersedes the error-free archive ... However, any real-time network would disable a state-of-the-art VT52 reference manual! This technology effectively fits the documented coprocessor.
6. Meanwhile an EPROM, vector-graphics, 32-bit interface would intentionally test the user-friendly LAN. Should users implement the structured expandability? That goes without saying.
7. LAN-compatibly, multi-taskingly irritated at fast-lane, user-hostile jargon interface protocol, a nested-window Ansible programmer breathtakingly created next-generation integrated mega-software to output light-emitting paragraphs of hi-tech motherboarding like 1-6 above, which FATAL FRIVOLITY ERROR CODE Ø1 Ø4 88 PLEASE TERMINATE PROGRAMMER INSTANTLY

Keyboard status: I boobed

The insanely expensive BIOS 3.1 *Technical Reference Manual* has lightened my darkness a bit. I was over-hasty in saying it wasn't possible for a program to tell whether SHIFT or CONTROL is physically being held down. When you make the 'get keyboard status' call (BX=32H, CX=ØFH, DX=ØFFØØH, call the Control Device Interrupt ØFCH), this information is returned as a formerly undocumented extra in the high byte of AX. Well, sometimes.

Officially, bit Ø in AH signifies that the left SHIFT is being pressed; bit 1, CONTROL; bit 2, ALT (you should be so lucky); and bit 3, the right SHIFT.

It was quite pleasing to find that in the despised BIOS 2.7, the CONTROL and SHIFT parts of this report worked ok on the PC/Xi (both SHIFT bits seem to get set whichever one you press).

Unfortunately it all fails on the F series machines: I can't persuade the F10 to return this particular status under any circumstances.

The manual hints that you can "invoke this for infra-red keyboards" with a prior call to the next keyboard Control Device function (BX=32H, CX=1ØH, INT FCH). By setting DX to Ø or 1 before calling this, you are able to turn off or on the deliriously useful 'Mode Locking Control'. With this on, CONTROL ESC sets 'control lock' analogously to SHIFT LOCK, and SHIFT CAPS LOCK persuades the F machine that you've set the nonexistent ALT LOCK. The actual state of the shift and control keys remains elusive.

But wait — tucked away in the Keyboard Driver section is another tantalising little snippet. If you care to intercept Interrupt Number ØE6H, you can tap into more information. (Not in old BIOS versions, of course.)

When this dummy interrupt is called, AL has one of the following hexadecimal values, indicating the 'special key' just pressed:

```
1       CAPS LOCK
2       RIGHT SHIFT
3       LEFT SHIFT
4       CONTROL
5       STOP
6       CALCULATOR
7       LCD ECHO
8       VOICE
9       ALT
A       PRINT
B       SYS REQ ("reserved for future use")
C       NUM LOCK (ditto)
```

If your interrupt-perversion routine leaves the AL value alone, and control is passed on to the BIOS (as detailed in past *Disinformation* columns), the key is recorded as having been pressed. If AL is set to zero, the keypress vanishes into oblivion. And meanwhile, your memory-resident program 'knows' about the keypress ... though not when it's released again.

Alternative Trick 1

This is still a bodge. My perspective is this: wearing my programmer's hat, I need to write memory-resident utilities, usually to fix problems in other programs. User commands directed to a memory-resident utility normally rely on the resident software knowing which key is physically being pressed ... which can be awkward with a 'soft' keyboard like the Apricot's.

Despite providing sixteen specialist Control Device calls relating to the keyboard, and two specialist interrupts (the above plus ØF9H or 'character-generating key pressed'), Apricot still won't let your program know which actual key was hit — even though this exact information is passed from the keyboard to the BIOS of all Apricots.

When even boring old IBM provides this elementary data in its standard keyboard BIOS call, it all seems a bit silly.

Of course there are tricks. On the PC and Xi, under certain risky circumstances which may entail your having to clear the keyboard buffer or hastily re-initialise as the BIOS goes into unstable 'stuttering', you can try having a look at the byte in processor port 64H. When you've written a suite of programs taking advantage of this useful but undocumented fact, you will find that they fail on the Xen — oops, but we can't complain, Apricot never admitted to this function.

Apricot blithely suggests that you use one of the documented Control Device calls to set what they call 'raw mode'. Here you start getting a string of keyboard scan codes appearing in the keyboard buffer (instead of the usual characters, just the plain key numbers).

Unfortunately you're only allowed one bite at the cherry. You've set 'raw mode', and along comes a scan code corresponding to key such-and-such, and it's not one that activates your program, so you need pass it on to the BIOS for interpretation ... Fat chance. Having got into 'raw mode' in hope of firmly identifying maybe two or three possible key-pushes, you have to go all the way and write a complete keyboard handler to replace all the look-up work the BIOS would normally have done. This is a bore, especially when it comes to maintaining records of all the statuses (is SHIFT down? CONTROL? CAPS LOCK? STOP?) which the BIOS now washes its hands of.

The expedient of having your program secretly reconfigure the keyboard is naughty and will lead to grief when — as I found with ACOLYTE and WordPerfect — some other program blows its top at your quiet seizure of just a few obscure keys that surely no one would ever use.

Alternative Trick 2

My final way is a trifle more tortuous, but is a useful compromise. From time to time, have your program sneak a look at the current keyboard table without changing it. For example, if you want HELP to do something special in your program, a certain amount of calculation will tell you what the HELP key actually generates in the current keyboard table: watch out for that character or string of characters, and strike when they appear ...

None of this applies, thank goodness, when you're writing a stand-alone non-resident program which can either assume the unmodified Apricot keyboard or impose its own. GWBASIC, incidentally, annoys many people by insisting on the latter. Exercise for the week: write a memory-resident bit of niftiness which saves and locks into place the current keyboard table (the offset and segment of whose 32-bit address may be found at locations 712H and 714H in the BIOS pointer table — segment Ø in all 'real' Apricots). It was easier than I feared ...

Meanwhile, while Apricot people are still preening themselves over my admission of error in the last release, I must share with you a wonderful fact about the BIOS 3.1 *Technical Reference Manual*. It comes with a disk placed loosely between the pages. This contained a demo program which, on being run, crashed the Xi — I must have been using BIOS 2.7. Undeterred, I tried the restart button, and the machine sprang into new life, and just before it hung up owing to the lack of a COMMAND.COM, I saw the version number of the BIOS supplied with this final and exhaustive manual.

No, you'll never guess.

BIOS 2.3.

The old screen-dump game

Apricot rather surreptitiously sneaked out an unsupported — 'Black Hole' — program to solve the well-worn problem of getting graphics screen prints on any Apricot. It's called SCRNCOPY.COM, and despite being fiddly to install it works quite well.

You need to load one of those weird graphics extension packages, appropriate to your machine: 8ØØ4ØØEG.EXE (for PC/Xi/Xen) or 64Ø2ØØEG.EXE (F series, except old unmodified F1s). Then you run SCRNCOPY followed by the name of one of the six printer drivers supplied.

With the usual transcendent naffness, Apricot provided driver files for its own-brand 'Apricot Writer' printers only; it's up to punters to find one which makes their real-world printer work.

SCRNCOPY AW22.PRD does the trick for Epsons, and the vast majority of matrix printers which are Epson-compatible. (Since all the driver filenames end in .PRD, does the program ingeniously assume this extension when none is supplied? Not likely.) After which, pressing CONTROL PRINT at any time causes a dot-by-dot graphics image of the current ACTIVITY screen, or whatever, to print out. No doubt the whole package is available on DEALS FOR READERS disk something-or-other *(yup: disk AP028, price £10 — Ed).*

But there is a snag. What some people want is a means of commanding screen dumps from within a program. SCRNCOPY's meagre .DOC file says the LCOPY command in GWBASIC will do this.

This may be so for the super final version of GWBASIC which some of our customers have been promised by Apricot. In practice, it often doesn't: reams of rubbish are printed, tastefully dotted with formfeeds to ensure that as much of your paper as possible is wasted.

To tackle this, it seemed sensible to find out what SCRNCOPY actually expects as a software 'print screen' command. The answer is a call to Apricot BIOS Interrupt EC hex, with the value 91 hex previously placed in the CX register of the processor. The call is documented in the BIOS 3.1 manual, but documented as not working in the basic BIOS 3.1 (ie without SCRNCOPY).

This is dead easy in Turbo Pascal. Set up the *Regs* record described in the manual, and a mere two statements are required — without even having to use an *InLine* call:

```
Regs.CX:= $91;
Intr($EC,Regs);
```

With GWBASIC one reluctantly has to do some work, as follows. DEBUG, being handy for quick assembly of diminutive bits of code, gave the machine-code translation of the needed assembler instructions: A1ØØ to Assemble, the three lines MOV CX,91, INT EC and RETF (Far RETurn command), U1ØØ to Unassemble the result and see what it became.

The resulting six bytes went into a Basic string variable to be called as a tiny machine-code subprogram, this being a technique I'd read about somewhere but never — as a Pascal/assembler snob — actually tried before.

These final few lines of GWBASIC will call SCRNCOPY (always assuming it's been installed) without special key-presses:

```
10  DEF SEG
20  SCRN$ = CHR$(185) + CHR$(145) + CHR$(0) + CHR$(205)
    + CHR$(236) + CHR$(203)
30  SCRNDUMP = PEEK(VARPTR(SCRN$)+1) + 256 *
    PEEK(VARPTR(SCRN$)+2)
40  CALL SCRNDUMP
```

Before going to all this trouble, though, try LCOPY — it might even work.

In general, any tiny little machine-code call could theoretically be made in this way — except calls to the Control Device itself (for which there are special provisions: see the GWBASIC manual).

Experiment, go boldly where no man has gone before, and don't worry too much about a few crashes when you first try things out. I crashed the above mighty program several times before realising a RETF rather than RET command was needed at the end. But of course, you will assume, I had thoughtfully saved everything to disk first. Er, well, just between you and me ... ◆

The Date Bug

Remember the BIOS 2.7 date bug that sneakily screwed up the system date a year ago? Well, it *was* a year ago — and now that we've reached March 1988, some of the patches on offer (including our own DETOUR.BAS) will actually start putting an *incorrect* date on your files. So if you're still running BIOS 2.7, don't forget to amend your AUTOEXEC.BATs ...

Ansible's LENT.COM is cleverer — you won't need it any more, but if you leave it installed it will give the correct date from 1 March 1988.

Strange-but-true department: both our Xis have NEC V30s fitted, and curiously this has added its own taint to the date bug. On all BIOS versions up to 2.7, the date is not transmitted from the MicroScreen to the system unit at all. It's left at the default setting, 1/1/80. It seems that it's only when you use BIOS 3.1 and above that the date is correctly handled by the V30.

Customise your keyboard

Part Two: Multilingual operations

By Guy Sturges

The standard character set on Apricot and IBM PCs supports some of the European languages, but those accented characters and symbols are not easily accessible from the keyboard. Some accented keys are assigned to the numeric keypad; it is not immediately obvious which key contains what without a reference.

To get around this problem it is easy enough to assign the accents alone to certain keys, mark those keys with Letraset, and use a keyboard driver to combine the accented key (known as a 'dead' key) with the letter on which the accent is required. (The dead key is described as such because the cursor does not advance until the next character is typed.)

I put the accents on number-pad keys with CONTROL shifting, as follows:

%	acute accent	eg á
*	grave accent	eg à
/	circumflex accent	eg â
-	umlaut	eg ä
+	[general]	eg å

The degree-sign and tilde accents are already on the keyboard via CONTROL-5 and CONTROL-9 respectively.

To incorporate the multilingual capabilities, use the ACTIVITY keyboard editor or KEYEDIT to modify the assignations of the above-mentioned number-pad keys; at the same time, replace the shifted number-pad keys with the box-drawing symbols instead of the accented characters that were originally assigned — these are no longer required, and the box-drawing is much more useful (and more obvious, if the keys are properly located).

Alternatively, you can use the keyboard definition GTALT.KB that comes with the GuyTec multilingual keyboard driver, as these changes are already implemented. Using the GuyTec driver (version 1.30) it is possible to access all the existing accented characters. The driver evens supports the extended multilingual character set which covers the accents on upper case characters. To support this a modified Apricot font is supplied by GuyTec replacing some of the lesser used graphic symbols with the extended characters.

You can use the keyboard definition that comes with the driver by installing GuyTec in your CONFIG.SYS: add the line DEVICE=GTMLKEY.SYS and reboot the system (making sure that GTMLKEY.SYS is on the boot disk). When the system is up, load your modified keyboard or the GTALT keyboard supplied and try it.

The characters supported in version 1.30 are covered in two groups: standard PC and GuyTec extended. (Any invalid sequence of accent and letter produces just the letter.)

Accent	Hex	Standard PC
circumflex	(ED)	a,e,i,o,u
umlaut	(EE)	a,e,i,o,u,A,O,U,y
acute	(EB)	a,e,i,o,u,E
grave	(EC)	□,a,e,i,o,u
degree	(F8)	□,a,A
tilde	(7E)	□,n,N,!,?
general	(EF)	a,c,s,A,C,S

Accent	Hex	GuyTec extended
circumflex	(ED)	□,A,E,I,O,U
umlaut	(EE)	□,E,I
acute	(EB)	□,A,I,O,U
grave	(EC)	□,A,E,I,O,U
degree	(F8)	o,O
tilde	(7E)	a,o,A,O
general	(EF)	□,o,O,f,F,p,P,y,Y

Note: the □ sign is used here to indicate a space or blank

The last three accents require some more explanation. First, the **degree** character is used to produce the little circle above in the å or Å; it produces a conventional raised degree sign if used with a blank. In the extended character set it produces a slashed O — as in ø or Ø.

The **tilde** produces a tilde accent on the letters shown and also inverts the exclamation and questionmark to produce the Iberian characters ¡ and ¿.

And the 'general' accent, for which I use the Letraset æ symbol on my keyboard, generates all sorts of special characters as follows:

Accent plus	*Result*
a	æ
A	Æ
c	ç
C	Ç
s	ß
S	ß
o	œ
O	Œ
f or F	French Franc symbol
p or P	Peseta symbol
y or Y	Yen symbol
[space]	the character at EF

It seems to work fine with BIOS 3.1 and MS-DOS 2.11. Some word processors load their own keyboards, however, and these will have to be modified accordingly or replaced with the one supplied.

Any printers that have the full IBM character set will work with the standard characters — but not with the extended characters, as the original graphics characters will appear. You will have to download a suitably modified font tailored to your particular printer for these to work correctly.

Next time we'll be looking at customising the keyboard to include the ALT key capability and also to reformat the keyboard to IBM 3270 layout. ◆

Review

TextStore's MicroLedger II

Experience in use

By E.A.A.Kimber

In May 1986 a friend in a service industry was persuading me to computerise his business, to be reorganised into four companies. Coincidentally I was asked by one of APRICOT FILE's regular contributors to give an accountant's opinion on a package he had for review — TextStore's MICROLEDGER II.

From the manual, the specification and a demo disk, it appeared well suited to the project in mind; and at £375 plus VAT for the Nominal, Sales and Purchase ledgers it was cheaper than the separate modules we had in mind. And while the system is protected by a serial number linked to the user's name, the extra £10 for each of the additional companies compared favourably with the multi-user charges on other accounting packages. The cost included a day's training at Luton or telephone support; the latter was chosen, but I have some reservations about that option. (The Amstrad market has meant that the price has been reduced to £99, plus £10 for each additional user, without support — this can be supplied at £50 per year. With the addition of Stock Control and Invoicing, the cost is now £149 plus VAT.)

Description

Sales and **Bought Ledgers** are kept on the open-item system with reports on all or unmatched items only, in alpha or numerical order.

Statements or **Remittance Advices** may be produced with a single selection, a range, or for all accounts; an **aged list** can also be produced. **Daybooks** can be flagged and closed to coincide with VAT periods. There is a program for matching items; these can be cleared periodically from the system by the Housekeeping program to provide more disk space.

The **audit trail** is provided by the printout of the detail of batches posted (automatically numbered) with totals automatically posted to the Nominal Ledger control accounts.

On the **Nominal Ledger**, double-entry bookkeeping is fully implemented with control accounts for bank, cash, and VAT as well as the personal ledgers. When setting up, accounts can be marked for sub-analysis and also whether they fall within the scope of VAT (to cover items not dealt with via the daybooks and suchlike) — appropriate questions will then be put when posting all batches.

We adopted the procedure of processing practically everything through the sales or purchase daybooks or petty cash, which keeps the nominal analysis simple. The sub-analysis was primarily designed to produce budget figures or departmental costs, but can be used in other ways to give analysis of nominal transactions.

Trial Balance is one of the Nominal Ledger reports and up to five sections can be specified for sub-totalling. **Profit & Loss Account and Balance Sheet** is another report; it gives the opportunity of including prepayments and accruals just in the report.

All accounts are cumulative until the Ledgers are closed via the Housekeeping routines. Monthly results require the subtraction of the previous period; on the other hand details of expenses etc can be reviewed without looking at separate monthly ledgers.

In use — Year One

The review of the accounting system as actually operated, and setting up the nominal and customer/supplier codes (MICROLEDGER demands a three-digit format) to produce accounts with the information required for the four companies was in itself beneficial.

Each company was allocated a colour to identify its disk, printout binder and working paper file. We decided on universal nominal accounts and the same supplier and customer codes where they were in common use by the companies. There were no MICROLEDGER problems in setting up the balances — it is sufficiently flexible to take care of adjustments.

We opted for a single-disk system for simplicity. That was adequate for the smaller companies, but one company had to be closed out twice to new disks. The sub-analysis was used to schedule individual employee and car expenses. The field of five digits provides for two breakdowns — 1-4 (which would be cost centre within department), 2-3, 3-2, or 4-1 (the last was used to denote employee initials or car number).

The full potential of MICROLEDGER is exploited when it is combined with a spreadsheet to make a variety of presentations after extracting the detail from the Trial Balance. SuperCalc 3 has been used.

At the end each month and after printing out the trial balance, the figures were transferred to a SuperCalc 3 template; that gave cumulative and month figures for each operating company, a consolidation of the three, figures for the holding company, and group consolidation.

The balance sheets were set out in columnar form with a group total. Using condensed print on two 11x9 sheets, the following are shown:

- 4 Sales items
- 8 Cost of Sales items
- 13 Operating Expenses
- 27 Admin and Selling Expenses
- 7 Establishment Expenses
- 5 Items of Depreciation
- 5 Financial Expenses

— all with headings, totals and percentages as well as Gross and Net Profit.

Year Two

There was a tax advantage in rolling the operations into one legal entity plus a group company, but the divisional information was still required.

With a little ingenuity MICROLEDGER still coped. The nominal sub-analysis was changed to 1-4: P, S and N in ANAL 1 gives a divisional report of all the P&L items, while ANAL 2 can still produce the car and employee expenses.

By this time the bookkeeper could handle the SuperCalc 3 schedules; so I designed a P&L template with a Company column to be filled in from the Trial Balance and P&L reports followed by three columns for the divisional results obtained from ANAL 1. If the extraction is correct there is an automatic zero check on each line in the final column. Totals and percentages are built in and the Gross and Net Company profits link with the MICROLEDGER P&L. These are of course the *cumulative* results; the bookkeeper has been trained to overlay and deduct the previous month's cumulative to give the current month.

SuperCalc templates have also been designed for the Balance Sheets and Car and Employee expenses. All these are printed out for use by local management pending the receipt of the final version with other reports from me.

The SuperCalc 3 disks are mailed with the copy MICROLEDGER disks each month. After review, any adjustments are made and the SuperCalc disks returned for future use after incorporating the figures in my disk. These can be manipulated to produced the various reports. These are broadly on the lines of year 1, but now a include rolling annual P&L for the year ended with the current month — which has a smoothing effect on the results. Budget reports for the current and previous year could equally well be produced for both month and cumulative with a spreadsheet.

It was decided for simplicity to continue with a single-disk system with quarterly housekeeping for the new combined company. It is dealing with a turnover of £3 million pa.

Conclusions

I understand MICROLEDGER II was designed by accountants. It certainly has some evidence of that, with a number of safeguards built into the menus; and the sub-analysis of nominal ledger items controlled by a 'budget menu' increases its scope. The manual is clearly written and on its own the software will automatically produce reports of the current situation for a trader and copes with VAT. In combination with a spreadsheet, MICROLEDGER can produce an extensive set of Accounts. ◆

MICROLEDGER II

Description:	Business accounts for Apricots — can run on one or two floppies or on hard disk. Copyrighted to Textstore Ltd, supplied exclusively through Mill Computers.
Supplier:	Mill Computers
Address:	18 Cardiff Road Luton Beds LU1 1PP
Telephone:	0582 458806
Price:	£99 plus VAT for the Nominal, Sales and Purchase ledgers; £149 to include Stock Control and Invoicing. Plus £10 per additional company password and £50 per year for support.
Configuration:	Any (non IBM-compatible) Apricot — IBM-compatible version also available.
Conclusion:	Sound, effective, and fairly versatile.

Notebook

Interim solution?

Coping with the IBM tide — problems and possibilities

By Terence Green and Simon Potter

There is one reality which owners of 'original' Apricots have to face up to: the world has passed us by.

Even though we can do all that an IBM PC user can (and more), we have to do it within limits that don't constrain full IBM-compatibles. Apricots just don't have the huge choice of established software, and they don't have a flood of new software coming on to the market every day.

Sooner or later the Apricot will have to go. An Apricot is just a machine for doing a job. When it stops doing it well is the time to look at alternatives.

Until the advent of OS/2, full IBM-compatibility with MS-DOS was the obvious alternative. Why should Apricot MS-DOS and IBM PC-DOS be incompatible? Although the hardware 'architecture' creates the basis for incompatibility, the problem for Apricot Xi owners is neither exclusively hardware-related nor exclusively software-related. Even though both operate under MS-DOS operating systems, the difficulties arise from a combination of circumstances.

The differing architectures mean that IBMs and Apricots deal with the screen and keyboard differently. Apricots write to the screen at a different address in RAM to that of IBM; the keyboard doesn't follow the IBM BIOS's handling routines. *(More detail on this in Nick Wilson's* Workshop *for Release* 2.9 *— Ed.)*

Support

As if that wasn't enough, most software publishers — apart from APRICOT FILE DEALS FOR READERS and the mighty Ansible Software — have forgotten that we exist. A very few programs use generic MS-DOS functions and should work on an Apricot; some also need the EMIBM utility. In practice a number of older programs use generic MS-DOS and include terminal selection setup routines — WordStar and dBASE II are examples.

But most software writers have enhanced their products by speeding up the screen and keyboard-handling through writing directly to the IBM BIOS ... which doesn't live where the Apricot's BIOS does. Worse, they have written programs which manipulate the screen and keyboard hardware directly: display messages are consigned to an area of RAM of which the Apricot screen is oblivious.

So software publishers for Apricots have all but disappeared. When software is available, it is often at least a few points behind on the version number, and it's generally more expensive than IBM equivalents.

Another problem is being left behind when the software you use is updated for the IBM only. And what about the machine itself? However satisfactorily the Apricot is performing right now, there comes a time when solder fails and chips start acting strangely. In the future, DIY hardware repair articles may fill the pages of APRICOT FILE.

Standards

That IBM creates the *de facto* standard cannot be gainsaid. With annual turnover greater than the combined sum of the next six manufacturers in the Top 10, Big Blue dominates the market.

Take the lesson of the Sirius, the forerunner of the Apricot and launched six months before IBM introduced (in the USA only) a PC with 64K RAM, cassette tape interface, and a games port. Everyone in the industry thought the Sirius was by far the better machine. Within another year the Sirius was all but forgotten, and the new standard in personal computing belonged to IBM.

So much for the past. But IBM has initiated a change in the ground rules; it may be worth reviewing the options for upgrading Apricots now.

According to IBM, the future for most MS-DOS users is OS/2. Never mind that the operating system addresses a microprocessor (Intel's 80286) that has already been superseded by the 80386; or that OS/2 applications are not going to appear overnight in numbers and variety to match MS-DOS. Frankly, nothing short of a complete about-face by IBM will halt the ascendance of OS/2 and PS/2 as the new standard for business desktop computing.

Still, this doesn't make MS-DOS obsolete. The installed user base is massive, the software choice is unparalleled, and most users have an added investment in hardware add-in expansion cards that will be incompatible with OS/2.

Options

So where does the aforesaid leave Apricot user, still soldiering on with Apricot MS-DOS? One third of the way through Roger Foster's promised five years of support, what does Apricot plc offer?

MS-DOS version 3 is not supported by Apricot for the Xi (though it works ok), but Apricot plc

does have an upgrade to full IBM-compatibility through the PC-286, a 80286-based replacement motherboard — which is a pretty direct statement of policy. Forget the real Apricots, upgrade to a 80286 which will run MS-DOS *or* OS/2 *or* Xenix, or almost anything in fashion. The choices then are:

1. Stay with the Xi till the solder disintegrates, then make a decision.
2. Upgrade to a PC-286.
3. Move to IBM-compatibility via a clone with MS-DOS.
4. Move to a clone with OS/2 when the full package with software is available some time in the future.

The first choice is the easy one — do nothing now, see how the standard evolves. The obvious advantages in the wait-and-see approach are the minimal investment and the ability to use the benefit of hindsight before actually taking any action. And there may be some very good reasons not to change:

- if you are not up against the limits in terms of functionality or storage space
- if you are satisfied with your present software — meaning it does everything you want
- if you have access to some decent maintenance, with a reasonable maintenance contract or close proximity to one of the specialist Apricot fixers
- if you don't need to run the same software as IBM-using compadres, or if you don't need to swap data files with them
- if you want to maximise the investment you and your staff have made in learning the Apricot and its software.

On the other hand ...

- you may want (or need) additional capabilities in your hardware or software, things that are available for the IBM-compatible user but will never be seen on the Apricot
- the suppliers of your existing software may stop supporting it
- maintenance may become increasingly hard to find, just at the time when natural wear and tear starts to take its toll
- all the exciting new products, all the 'how-to' books and articles, all the sources of help and advice are for IBM-compatibles. You're in a backwater; the Apricot community is shrinking, and even APRICOT FILE will one day be forced to shut down when the resubscription levels tail off
- in accounting terms, your investment has probably been amortised by now; you shouldn't expect to run the existing system for ever.

From the sublime to the expensive: option four, switching to a 286-based machine with OS/2, probably isn't worth considering right now for any but the larger user. True, MS-DOS is only a single-tasking single-user operating system; OS/2 addresses some of the areas of deficiency and provides functions that 'power' users have found they need. What's more, software developers with grand new products will ignore MS-DOS in favour of going straight for OS/2-specific implementations.

But that's a long way off yet. What's more, OS/2 isn't exactly widespread — first shipments are only just starting. On past experience of the software business, it will take a year or two for the operating system to lose its bugs (already some software and a few peripherals have been found to be incompatible with it) and acquire a full range of functionality. OS/2 is currently very big — you probably need as much as 4MB RAM to do anything useful — and it's undoubtedly a bit clumsy in parts.

Still, corporate users will probably be swept along with the rest into OS/2. Others have a choice, and I decided to forget OS/2 for now.

The second and third approaches — staying with MS-DOS but moving to IBM-compatibility — amount to much the same thing. Both involve buying a new computer, or paying much the same to Apricot for new innards in the shape of the £999 PC-286 conversion.

But the PC-286 isn't attractive. It is hard to see why one would want to bastardise a perfectly useful computer in this fashion when a few pounds more will buy a serviceable (and more expandable) 20MB 286-based clone; prices for AT-compatibles start at around £1,250. And the same price or less will buy a 20MB hard disk in an 8086 PC-compatible.

My own need was to gain IBM-compatibility *and* to retain the Apricot; so I took option three. This has two clear advantages. First, adding a modestly-priced clone gives IBM-compatible 5¼in disk drives alongside the Apricot's 3½in format, so you can run both disk sizes and both formats. And second, you get to keep the Xi for software that is Apricot-specific, while having access to the big wide world of IBM-compatibility.

Practicalities

But there are also some drawbacks.

- You need enough room and enough sockets to run a second computer. This sounds trivial, but

in a small one-person one-desk business it can be quite awkward.

- You double the running costs — primarily of maintenance and consumables like disks.
- Application software can be a problem. In most cases you won't be able to use your Apricot software directly on an IBM — and if that *is* possible, you'll probably be violating your licence (if that matters to you). So you'll have to budget for a load of brand new IBM-compatible packages. At least some of the packages you're familiar with are now available for IBM-compatibles at greatly reduced prices, thanks to Amstrad and others: SuperCalc 3, dBASE II, and even SuperWriter all cost less than £100 in IBM guise. Another option is Ansible's APE Apricot emulator, which runs Apricot software — including SuperWriter and SuperCalc — on IBM-compatibles. *(We are currently reviewing it — Ed.)*
- Alternatively, you might decide it is time to change to more modern applications software from the huge MS-DOS range. An uprated version of an existing package will generally accept data files in the older format — the rather good SuperCalc 4, for instance, will take worksheets from SuperCalc 3 irrespective of which computer they were created on. But otherwise the format in which your present software keeps its data files becomes important. If your package produces ASCII output, either directly or via an Export facility, there is normally no problem — most packages read ASCII-format input. If it doesn't, you face re-keying everything or investing in a file format transfer program like FILE GENIE — which may or may not do the trick.
- Getting data files (and possibly even programs) from an Apricot disk on to an IBM-format floppy isn't too much of a problem. The simplest method is to send your Apricot disks to one of the many service companies who can transfer files between almost any format. That won't cost much ... unless you need to do it on a regular basis.
- If you do need to transfer files often between the computers, it's a bit more complicated. The expensive option is a shared hard disk, effectively a very simple local area network — both computers get an interface card, a bit of software and a cable that links them to a shared external hard disk unit. That way you can for instance save files from the Apricot to the hard disk and read them from on to the IBM-compatible; TP Group, publishers of APRICOT FILE, have such a system that links Apricots, IBMs and even a Sirius.
- The cheap 'n' simple alternative is to plug the two computers together with what's called a null modem cable going between their RS-232 serial ports. You then need some file transfer software running in both machines; it could be DEALS FOR READERS's £57.50 TRANSEND program or some other general-purpose comms package with file transfer options built in, or you could take the cheap option of KERMIT. I chose KERMIT, a public domain package designed specifically for file transfers that is also available from DEALS FOR READERS in Apricot and IBM versions; and I haven't bothered to change. KERMIT isn't hard to use, and it's fairly quick — at 9600 baud a 100K file transfers in three minutes. I have transferred archived files of over a megabyte with no problems, during extended tea-breaks.

And the cost? For the £25 it cost for two copies of KERMIT, and the parts for a serial connection which I soldered using the connections recommended in Apricot's ASYNC guide, I can transfer data and programs between Apricot and IBM computers. IBM PC clones are now under £500, compared to the Apricot Xi's purchase cost of £2,500 four years ago; hard-disk PC-compatibles go for less than £900, compared with the PC-286 upgrade at just under £1,000. And if you wanted to move completely over, you could offset the cost by selling your Apricot for a few hundred quid though an APRICOT FILE small ad.

If you're inclined to change, this route represents a modestly-priced method of sampling the wide world of IBM — and the benefits of being back in the mainstream. ◆

We didn't ask Terence to write this piece, but it does mesh well with our thinking.

In fact, this article arrived just as we were putting the finishing touches to our complete Apricot-to-IBM upgrade package — see the DEALS FOR READERS update on the next page. Alternatively, we can offer parts of what you might need: for instance, we can and do transfer between Apricot, IBM and/or Sirius at very modest rates. As Terence noted, we have KERMIT in both IBM and Apricot formats — we can also sell you a cable. And we can supply a small network based on a shared hard disk setup, Plus 5's PlusNET.

Full details from Roger Gann at 01-833 3501 as usual.

New from Deals For Readers

System

Apricot plus IBM Upgrade

Order no: AH999
Price: £1,475
[plus VAT and despatch]

If you feel you need to move out of the Apricot world into the mainstream of IBM-compatibility, this is probably the easiest way to do it — you retain the Apricot and your existing software; we give you a fast IBM-compatible clone (Martin Filmer's OMEGA) and everything you need to switch. This is what you get:

- System unit with 80286 processor — switchable between 8 and 12MHz (the Apricot's 8086 runs at a mere 4.77MHz)
- Internal 20 megabyte hard disk — with fast access times (half as fast again as Apricot's)
- A 1.2MB AT-compatible 5¼in floppy disk drive to read all IBM 5¼in formats
- Centronics port and cable, so you can retain your present printer
- RS-232 port and AT-to-standard adapter (retain all your serial peripherals, and no need to swap plugs to fit the nine-pin AT-type socket)
- Full-size professional-style AT-type keyboard (101 keys)
- Monochrome monitor (14in screen; green-on-black or yellow-on-amber display, as you wish) — but with an EGA controller already supplied if you want to move to colour graphics in the future
- MS-DOS 3.2 — fully compatible with the Apricot's operating system
- Ansible APE Apricot emulator — runs SuperWriter, SuperCalc and other Apricot software on the IBM (so you don't need to buy new IBM versions of your packages if you don't want to)
- File transfer software (KERMIT) and a purpose-designed RS-232 cable to move all your data from one machine to the other
- A menu front-end and memory-resident desktop utilities (calendar, address book, etc) to make your life easier
- The most useful IBM-format public domain utilities that we've come across — about 5KB of them!
- Ten blank AT-format 1.2MB floppy disks to get you started

Our price is £1,475 plus VAT — a total of £1,696.25.

We think you'll find that pretty competitive for an AT-type IBM-compatible system with a 20MB hard disk and an EGA controller — especially as we're offering a complete and ready-to-use package that will complement or replace your Apricot.

The only other cost is a shipping charge, which will obviously vary according to your location. We can also provide an installation service — we will deliver the system, set it up, and get you started. Again, we can't quote precise all-in rates for this service; but we would be happy to quote for it.

CALL US ON 01-833 3501 FOR FURTHER DETAILS AND A COMPLETE SPEC SHEET

Books

Fast Track

Order no: AB019
Price: £17.95

The latest intro to information technology from the pen of TP Group's Dennis Jarrett, subtitled 'Information Technology for the Fast-Track Executive' — a compact overview of the current state of computing for the office and the organisation, written in plain English but aiming to provide a short, sharp lesson in the terminology of IT, the pros and cons, the current position and the immediate future for the relevant technologies. A packed little number (not so little, actually, with 250+ pages of information and advice). Published by McGraw Hill.

Hackers' Handbook III

Order no: AB018
Price: £7

Wholeheartedly recommended as an intro to modem communications. It's been a long wait, but Hugo Cornwall and Century Hutchinson have finally got round to producing the third (and much revised) edition of this little classic. "If you're not already into computer communications, prepare to be amazed" said one reviewer. It's primarily about 'hacking', meaning unauthorised but non-malicious access to supposedly secure on-line systems, and there's a lot of how-to detail (along with some what-happened stuff on previously-reported hacks). It's a good read for that alone; and for potential targets of hacking it's probably essential. But along the way the book provides some of the best basic information on data comms you'll find anywhere.

Managing Your Hard Disk

Order no: AB012
Price: £19

Another by our favourite computer-specific publisher, this meaty tome from Que covers basic information, tips, advice ... just about any and everything you might want to know about hard disks and their use in the real world. Ignore the IBM-specific bits and it's still a real goldmine of sensible, pragmatic information. By Don Berliner.

Using 1-2-3

Order no: AB014
Price: £23

Que has sold a million copies of what by all accounts is the very best guide to the market-leading spreadsheet-plus-graphics package — so we've decided (at last) to stock it, particularly now that there's a much-revised second edition.

1-2-3 Tips, Tricks and Traps

Order no: AB015
Price: £18.50

The companion volume for the more advanced user, again by Que and again in an all-new second edition.

dBASE Demystified

Order no: AB016
Price: £20

Solid, sound, sane guide to dBASE — starts with dBASE II, covers dBASE III and III Plus as well. Published by McGraw Hill.

GWBasic Quick Reference

Order no: AB017
Price: £9

The full title is the Quick Professional Reference Guide, which just about sums it up. More a reference than a tutorial; but there isn't much published specifically on GWBasic, so we must be grateful for small mercies ... At least this one is published in Britain.

New Catalogue in full with next month's issue

The Workshop

A dBASE Primer

Part One: Safe Sets Starting with dBASE II

By Terence Green

dBASE is a survivor from the early days of eight-bit CP/M-based micro software. It's also the database manager the competition love to hate — and love to compete with. So why should you consider using it? And isn't it difficult to use anyway?

The myth that dBASE is only a programmer's language discourages many people. But dBASE was developed with the idea of enabling non-programmers to manage sets of data. As a result, dBASE has many powerful commands which simplify the process of creating databases, querying them, and generating reports; yet it also includes programming structures such as DO WHILE and IF ... ELSE which may be incorporated into powerful and complex command files to automate repetitive tasks.

In short, dBASE is technically adept — both for simple and for more complex uses. It's also widely-used, well-documented, and has available a number of third-party add-ons that extend its capability. As a result, dBASE is by no means a bad choice for writing custom-built file-handling applications.

This short (and occasional) series provides a beginner's guide to dBASE. It also applies to the dBASE-compatible dBXL as supplied by APRICOT FILE DEALS FOR READERS.

History

The final release of dBASE II (version 2.43*) appeared in July 1985. A completely rewritten dBASE III was released as long ago as November 1984; and that was replaced first by dBASE III version 1.2 (the so-called Developer's Release) in August 1985, then by dBASE III Plus in November 1985.

dBASE II soldiers on, having gained a new lease of life with the Amstrad PC. It's available for the Apricot. As for dBASE III, Apricot owners get to use the Developer's Release in a version that's still copy-protected (with a nasty system that writes bits of files with odd names that locate themselves in various corners of your hard disk and cause no end of bother if you don't discover this interesting habit before backing up or compressing your hard disk).

Getting started

dBASE is loaded by typing 'DBASE' at the MS-DOS prompt followed by RETURN. That produces the inscrutable dBASE prompt, a single dot indented one space.

Now, there are two modes of use in dBASE. In *Immediate* mode, dBASE accepts commands and executes them immediately; *Command File* mode is for run-time applications, executing a previously-created file of dBASE commands.

In Immediate mode dBASE will execute any command you input at the dot prompt. Create a file structure for your data, say a simple name-and-address list: enter some names and addresses: and you have a database. Type 'LIST', press RETURN, and the entire contents of your database will flash before your eyes.

A Command File is a text file with the suffix .PRG, created with a text editor or word processor in much the same way as a BATch file. Once saved, the command file is run from the dot prompt by typing 'DO' followed by the Command File's name. A very simple example would have these two lines in a file called STATUS.PRG:

```
SET BELL OFF
SET DEFAULT TO B:
```

Start dBASE II and type 'DO STATUS' at the prompt. The two commands will be processed automatically — and respectively they will switch the bell or beeper off, and use drive B to look for or create database files. (dBASE III achieves the same effect with a special configuration file which it looks for each time it is loaded.)

Whether you're planning a database or writing a Command File, the process should always begin with a plan on paper. Think about the data you want to store and why you want to store it; make a list of the outputs you require. For example, in an address file you may need the postcode on a separate line for sorting purposes but want it printed on the same line as the town name for labels.

CREATE a file

Let's set up an address database. We begin by creating a *data structure*, which defines how each piece of data is stored. In dBASE this is as close as we need get to the nitty gritty of physical file structure.

Each piece of information is kept in a FIELD, which may hold up to 254 characters. A name and address could be stored in a single field; but for most purposes it is more sensible to separate the constituent parts into at least two fields:

```
FIELD1  John Smith
FIELD2  32 Broad Road, Leominster LM2 3SX
```

These two fields together constitute one name-and-address RECORD. If you collect together a hundred name-and-address combinations, there are 100 records in the database FILE. All database files in dBASE have the extension .DBF.

CREATE is the command with which we tell dBASE we want to start defining fields for a new database. Type 'CREATE' at the dot prompt and you will be asked to furnish a FILE name:

```
. CREATE
. FILE? CONTACTS
```

(Your input in these examples is underlined.) Or you can append your chosen filename to the CREATE command:

```
. CREATE CONTACTS
```

(Obviously we're setting up a file called CONTACTS.) Either way, dBASE II replies with this — dBASE III users get more information on screen in a slightly different format, but the approach is similar:

```
ENTER RECORD STRUCTURE AS FOLLOWS
 FIELD   NAME,TYPE,WIDTH,DECIMAL
 001
```

dBASE is waiting for your definition of the first field. Each field is defined in turn as you tell dBASE what the name and contents are going to be; you also need to define how long each field is. Don't worry if it isn't right the first time. Nothing, as they say, is cast in stone.

The FIELD column lists the fields in sequence. NAME is your choice of name for the field in question. There is no need to memorise the field number; all fields are known by the name you give them.

It makes sense to give names to fields which reflect their contents. A field name can contain up to ten characters. The NAME can include alphanumerics but must start with an alphabetical character. Spaces aren't allowed; in dBASE II a colon may be used as a substitute for a space in the interest of clarity, in dBASE III the character used has changed to an underscore — so in dBASE II a field entry might read ...

```
FIRST:NAME,C,20
```

while the same kind of thing in dBASE III would go ...

```
FIRST_NAME,C,20
```

TYPE is a single character that indicates the kind of data to be stored in the field; there are three options. Character fields store up to 254 characters as text. Numeric fields contain numbers only, and can be used in calculations. Logical fields store one character — 'Y', ' y', ' T' or 't' for True: 'N', 'n', 'F' or 'f' for False.

WIDTH is the space you wish to allocate to the field in number of characters. The DECIMAL entry is only necessary when you want a number field with a decimal point for calculations.

That's it for dBASE II. With dBASE III you can specify two extra field TYPEs — Date fields (a big advance on dBASE II as date arithmetic is simplified) and Memo fields (used for storing larger blocks of text than character fields allow).

Limits and capacities

	dBASE II	dBASE III
Fields per database:	32	128
Total characters per record:	1,000	4,000
Maximum characters per field:	254	254
Maximum records per file:	65,536	1 billion

With that in mind, let's look at our name and address structure again:

```
FIELD1  John Smith
FIELD2  32 Broad Road, Leominster LM2 3SX
```

Is the format satisfactory? Perhaps it will suffice for simple lookup tables; but the database will be more flexible if we break it down into smaller fields. A single field for the name means entering names in this format if you want address labels to print correctly:

```
Mr John Smith
Dave Watters
  ... etc
```

But that way you couldn't arrange the file alphabetically by surname. Alternatively, this format will sort correctly, but looks odd when printed on a letter:

```
Smith, Mr John
Watters, Dave
  ... etc
```

Separating Christian name and surname into two fields will solve the problem. Similarly it is sensible to have addresses on separate lines for street, town, and postcode. And, by adding a phone number field, we can print a telephone directory or look up someone's number on screen. Remember that you can always change the structure later while retaining the data already entered.

Cursor movement in full-screen mode

CONTROL-shifted	Option	Effect
CONTROL X	down arrow	move one field down
CONTROL E	up arrow	move one field up
CONTROL D	right arrow	move one char right
CONTROL S	left arrow	move one char left
CONTROL Q		exit without saving changes
CONTROL W		exit and save changes
CONTROL C		go to next record
CONTROL R		go to previous record
CONTROL G		delete character at cursor
CONTROL Y		delete line to right of cursor
CONTROL U		mark record for deletion
CONTROL V		toggle insert mode on/off

So the completed definition might look like this in dBASE II:

```
ENTER RECORD STRUCTURE AS FOLLOWS
 FIELD    NAME,TYPE,WIDTH,DECIMAL
 001      First:Name,c,20
 002      Surname,c,20
 003      Address1,c,25
 004      Address2,c,25
 005      Address3,c,25
 006      Postcode,c,8
 007      Telephone,c,15
 008
```

In dBASE III the field details can be edited during the creation process. But if you make a mistake while entering field details with dBASE II, you'll have to start again.

Field names can be edited and manipulated with the MODIFY STRUCTURE command, but in DBASE II this deletes all records in the database. Of course this doesn't matter with a new database which has no records, but as it can also be used with live data it will be dealt with in more detail in the next instalment. dBASE III records are automatically retained when using MODIFY STRUCTURE, subject to a few limitations.

If your entries are correct, press RETURN before entering anything for field number 008 and dBASE will ask ...

INPUT DATA NOW? Y/N

If your answer is N[o], the file is created with your field definitions. It is of course empty, and you can add records when you're ready. If you reply Y[es], a blank record will be displayed on screen ready to be filled in:

```
RECORD 00001
  NAME     :                    :
  ADDRESS1 :                         :
  ADDRESS2 :                         :
  ADDRESS3 :                         :
  POSTCODE:        :
  TELEPHONE          :
```

Entering or altering data

Adding records is done with the dBASE APPEND command, changing data in existing records uses the EDIT command. These are 'full-screen' operations, which means you can use cursor movement and control-key editing commands similar to WordStar's. (MODIFY STRUCTURE is another full-screen operation — we'll deal with that one later). A partial list of cursor control commands is given in the table.

To add to or amend data in an existing database, it must be opened by the USE command followed by a filename; USE by itself will close an active database.

```
. USE CONTACTS
```

This will close any currently-active database file and open our CONTACTS file. You can check that CONTACTS is indeed the database now active:

```
DISPLAY STRUCTURE
```

(Or LIST STRUCTURE.) You should see something like this:

```
Structure for file: A:NAMES     .DBF
Number of records: 00000
Date of last update: 15/02/88
Primary use database
Fld     Name          Type Width Dec
001     FIRST:NAMEC     020
002     SURNAME   C     020
003     ADDRESS1  C     025
004     ADDRESS2  C     025
005     ADDRESS3  C     025
006     POSTCODE  C     008
007     TELEPHONE C     015
** Total **            00139
```

dBASE keeps a space in each record for a 'record deleted' marker, so the total above is actually one byte larger than the sum of the field widths.

If you answered 'N' earlier to the INPUT DATA NOW Y/N? message, there will be no live records in the file. So type this:

```
. USE CONTACTS
. APPEND
```

APPEND adds records to the database in full-screen operation. The next numbered empty record is displayed for data entry. If you press RETURN at the first character position of the first field, dBASE terminates the append and saves the records entered thus far. Pressing RETURN anywhere else saves the current field in and moves to the beginning of the next field; if you're at the last field in a record, the cursor moves to the beginning of the next record.

If you enter a field completely, dBASE beeps and moves automatically to the next field. Mistakes anywhere in a record can be corrected before completing the last field by moving the cursor with the cursor keys.

Once you have entered a few records, return to the dot prompt and type 'LIST'. It will look a real mess — each record is nearly twice as long as the screen width, and is merely wrapped at the end of each line. So try this:

```
. LIST first:name,surname,telephone
```

Better? The LIST command gives immediate results and is also very flexible. Now let's print it:

```
. SET PRINT ON
. LIST first:name,surname,telephone
. SET PRINT OFF
```

Don't forget to SET PRINT OFF at the end — otherwise everything on the screen will be echoed to the printer.

Winding up

End of Part One. I hope you'll use these commands, and refer to the reference guide for more explanation, before the next instalment.

A few thoughts on safety should end this episode. Learning to manipulate databases takes less time and does less damage when you practice on small databases. Another safe method of trying out unfamiliar instructions on a 'live' database, if you have access to one, is by working on a copy of the 'live' version:

```
. COPY CONTACTS TO TEMP
. USE TEMP
```

That will allow 'safe' experimentation, and you can make TEMP the working database if your experiments bear fruit.

The other all-important precaution applies to any electronic filing system — *take regular backup copies*. Having had a hand in destroying a 3,000-record database some years ago, I can heartily recommend that procedure. ◆

Commands covered here

APPEND CREATE
DO EDIT
LIST USE
DISPLAY STRUCTURE

Next issue — locating and manipulating data, and basic printed output.

The MENU command

dBASE II version 2.43* includes a MENU system, invoked either by entering 'DO MENU' at the dBASE prompt or invoking it with dBASE by typing 'DBASE MENU' at the MS-DOS prompt.

Ashton-Tate's stated aim with MENU is to shield non-programmers from dBASE II commands — in theory, you can use it to set up plain-English instructions for the end-user. But the CREATE in MENU is painfully slow, so slow that I almost rebooted thinking it had died before the MS-DOS prompt eventually re-appeared. It also insists that a new file be keyed (indexed), mainly for MENU's purposes I think; but indexing records isn't mandatory.

To my mind MENU is more frustrating to use than dBASE II in the raw, and more likely to put off the novice user rather than to help. Use it, but don't persist if it bugs you.

dBASE III provides the ASSIST function, which does the same job as MENU with more panache.

Now read on

Among the plethora of dBASE II-related titles there are two very useful books, both published by Ashton-Tate and available widely from A-T dealers and specialist computer bookshops:

- **Everyman's Database Primer**

  A step-through introduction to creating and using databases. Separate editions for dBASE II, III and III Plus. Price £16.95.

- **Advanced Programmers Guide**

  The complete lowdown on dBASE II and III. Theory of databases, using dBASE, practical examples — a complete reference guide for £25.95.

And from DEALS FOR READERS, you should check out ...

- **Data Management at Work**

  Articulate, jargon-free exposition of what to consider and why when you're contemplating any kind of file manager; written by Kathy Lang, one of the better computer-industry writers and technical reviewers. Order no AB002, price just £3 (includes P&P).

- **dBASE Demystified**

  Solid, sound, sane guide to dBASE — starts with dBASE II, covers dBASE III and III Plus as well. Order no AB016, price £20 (includes P&P).

Deals For Readers and dBASE

WordTech DBXL

Order no: AS167 **Price: £125**

A dBASE III+ clone for a quarter of the price! File structures, syntax, commands and indexing are fully compatible with dBASE III+; they run identically, too. Features menu-driven options and 'Tutor' line for novices.

The dBASE II Disk

Order no: AP017 **Price: £15**

dBASE II program suites for membership records, a dBASE routine library, label printing, the ubiquitous mailing list program, a product tracking system, form letter generator and sundry dBASE utilities.

QuickCode

Order no: AS040 **Price: £75**

Fox & Geller's dBASE II program generator at less than half the RRP. "Rich in facilities" said one review; can dramatically reduce development time for dBASE programs.

dGRAPH

Order no: AS041 **Price: £75**

Another Fox & Geller's dBASE add-on; enables you to turn your dBASE II data into a variety of graphs — pie-graphs, bar charts and line graphs. A low price for this proven utility.

dBASE VICAR

dBASE II: AS029 **Price: £90**
dBASE III: AS030 **Price: £148**

Variables In Context Analysis and Reporter: clutch of neat programmer's aids that began life as a fairly conventional cross-referencer to track the names and usage of variables, but adds extra functions and importantly shows the complete context for a variable — not just a line number.

The Q&A Clinic:

Questions by subscribers, answers by APRICOT FILE

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

Q. V30 on F1 ...

Is it possible to make an F1 work faster with the V30 chip? Do you have to do something to the monitor?

A. In the F1, the V30 should produce an average improvement in speed of around 10 per cent — maybe as much as 50 per cent on some applications. And the monitor only requires adjustment if you want BIOS 3.1 ROM chips.

Q. ... Sounds like a V30

While replacing the standard 8086 chip with the supposedly compatible NEC V30 certainly speeds up processing — Norton SI index goes from 1.2 to 2.9 — it does mean that music can no longer be played (you get random octaves — my little test program in Basic to play *Frere Jacques* sounds most strange) and a noise is generated at power-up until the Reset button is pressed or boot-up starts. Can you or NEC tell me why this is? And why do I get Error 31 on power-up?

A. Error 31 is 'keyboard faulty or not connected' — you'll get it, for instance, if the keyboard cable has a dodgey connector. In this case we think it's a timing problem on the communication between the keyboard controller and the system unit; there's nothing you can do about it, as far as we know. Ditto for the noise effects — see the review in APRICOT FILE Release 1.9 and a letter from Sten Ternström in 2.1 for more about this.

Q. De-dongles

Are there any Apricot equivalents for the IBM copy-protection breakers such as COPYWRITE and COPYIIPC to enable loading of programs like Psion Chess or Lotus Symphony to a hard disk so that the toggle disk is not required each time these are invoked?

A. Not to our knowledge. The copy protection schemes in most popular software is not too stringent, however, which means that for many packages someone somewhere has been beavering away with DEBUG to produce a patch or two that will allow usage from a hard disk. We don't actually know of any for Psion Chess or Symphony, but chances are that someone else does ... Any offers?

Q. GW-BASIC hard copy

On GW-BASIC, how do you get hard copy?

A. You need the Black Hole screen dump utility from DEALS FOR READERS disk AP028 — then LCOPY will work.

Q. P6 printing

I have a problem with my NEC P6 printer — I keep getting a line feed when I don't want one. I know this is due to the Apricot sending a line feed to the printer; but having to cut the wire to pin 14 doesn't seem to me a very good solution, because the printer now stores my status line in its buffer and releases it when I ask SuperWriter to print a document. Isn't there a way of changing the necessary parameter in COMMAND.COM using DEBUG, so that I don't have to keep chopping off the wire to pin 14?

A. It's worth checking the printer's DIP switches to disable CR/LF such that you get CR alone at the end of a line; but this is so obvious you've probably tried it. The same applies to the printer setup options in SuperWriter via INSW, where again you can choose between CR and CR/LF. If neither of these fix the problem, we're baffled ...

Q. NEC problems (2)

While using the prompt line that you mentioned in the MS-DOS environment article (APRICOT FILE Release 2.9) I found that the $eK sequence (clear to end of line) after a CONTROL-P causes my NEC printer to print, do some forward and backward movements, and then stop. Subsequently it refuses to accept *any* other instructions (including Reset, or initialise from INIT.COM or 1C 40). I have to turn the machine off and on again before anything happens. Do you have any idea why?

A. CONTROL-P means that output is redirected to the printer — including the escape codes in the prompt line. So the printer will try to obey them — obviously they have a different effect than for the display — and it gets thoroughly confused. It happens to our office MT80, too.

Q. Modified MANAGER

After installing DEALS FOR READERS disk AP026, the modified MANAGER for BIOS 3.2.1, everything worked without problems — except for SETUP, which produces the message 'invalid or corrupt system disk' if I choose MODIFY in the SETUP menu ladder. Any idea why?

A. Beware! MODIFY can scramble your hard disk. Don't use it! We have reported the bug to the author of these amended MANAGER utilities, Jost Reidel, but in the meantime we're withdrawing disk AP026.

Q. MS-DOS 3.1 revisited

I've installed the new version of MS-DOS, and have one or two queries:

- **CHKDSK.COM doesn't work under the new system. Any ideas?**
- **PRINT.COM doesn't work either. Nor can I make your PRINT.EXE work: it requires SPOOLER.EXE, which in turn requires a printer driver. I've used PRINTER.EXE to tell my computer to use the parallel port: what else need I do?**
- **Clusters are still 8,192 bytes in size. One of you suggested at the Which Computer Show that smaller clusters could be obtained under MS-DOS 3.1; is that so?**

A. You *have* to use CHKDSK.EXE with MS-DOS 3.1 — CHKDSK.COM from MS-DOS 2.11 won't work. The problems with PRINT.COM and PRINT.EXE are bugs, and they're among the reasons we no longer sell DEALS FOR READERS disk AP026 (see above). And the smaller-clusters effect appears to work only for disks of 20MB or larger.

Q. SuperWriter and DOS 3

How do you solve the problem of using MS-DOS 3.1 with SuperWriter? The first two MicroScreen keys are permanently enabled to produce plus and comma; I want my INS MODE and INS MARK back ...

A. One trick: start with BIOS 2.7 and use KEYEDIT to examine and note down the key assignments. Then reboot with BIOS 3.1; check the key assignments again with KEYEDIT, and use the utility to change them if they differ.

Alternatively, there is the inevitable Ansible solution — the SWKB.COM keyboard loader on the newly-revised 'best-of' ASD disk (from DEALS FOR READERS, price now £69 — details next month). This will restore the MicroScreen "*and* add other triffic improvements", says David.

Q. BIOS and DOS 3.2

Does BIOS 2.7 work with MS-DOS 3.2, or must I use BIOS 3.1?

A. You *have* to use BIOS 3.1 with MS-DOS 3.2 — no, we don't know why. A case for SuperHacker? Anyway, what's wrong with 3.1?

Q. Replacement hard disks

I have a fairly noisy 10MB hard disk which is becoming full. What would one expect to pay to get a 20/30MB hard disk keeping the original? I have seen prices of around £300-£350 for IBM-compatible replacements, but I've seen nothing similar for the Apricot. Is it possible to run two hard disks from the same controller?

A. Our price for an upgrade to a faster 20MB Miniscribe unit is £575 all in (includes VAT and labour). You could probably buy a 20MB disk drive alone for £300 or less, though prices do seem to fluctuate quite widely.

As for running two hard disks, this is feasible on the Xen but not on the 8086 Apricots. And trying to do it with two controllers in the same machine would probably produce major conflicts, though you could have a Plus 5 controller (for an external hard disk) coexisting with the controller for an internal Winchester. The general feeling about Plus 5's kit is that it's good (which is why we sell it through DEALS FOR READERS) but pricey (which is why we don't sell much of it).

Q. Disk in the middle

Does the Miniscribe hard disk for the Apricot PC/Xi *have* to replace drive A? Didn't a British company advertise a hard disk that could be put in the space where the carrying handle is sited?

A. Yes indeed, there was such a company — and we never heard anything good about them. What's more, their disk wasn't self-booting. In theory the mod can be done, but the PC is pretty cramped internally and putting in a hard disk as well can lead to overheating problems.

Q. Portable display

How do you switch the Portable's display into 640x256 mode on a monochrome monitor?

A. We don't think you can — as far as we know the 640x256 format was available only on the early F1. But we'd be prepared to take any advice on the subject!

Q. DEBUG versions

I bought DEALS FOR READERS disk AP002 primarily for DEBUG and CHMOD, but I cannot get DEBUG to work because it returns 'Incorrect DOS version'. Which version is it supposed to use?

A. We have seven or eight different versions of DEBUG; most of them are MS-DOS-sensitive, so you can't please all of the people all of the time — AP002 normally carries the very latest version of DEBUG, which at the time of writing is the one that came with MS-DOS 3.2. Anyone who wants a collection of DEBUGs for fun and/or experimentation is welcome to drop Roger Gann a line with a formatted disk and SAE. ◆

Inside MS-DOS

RAMdisk and disk cachers for beginners

By Garret Keogh and Simon Potter

Gone are the days of Vics with 3K and ZX81s with 1K of random access memory. Now most computers have at least 256KB, IBM-compatibles rarely come with less than 512K, and the norm for business computing is the full workspace that MS-DOS can access as user memory — 640KB for IBM-compatibles, 896KB for the Apricot.

Applications use RAM by transferring data and programs from disk into memory. But most applications don't use all the available memory to the full. In some cases that's because they take the lowest-common-denominator approach, assuming that the software will have to run satisfactorily for users who might have relatively little memory. Other programs still show their heritage in eight-bit days, when 64KB was the maximum they had to play with — WordStar and SuperCalc are the classic examples.

Why disk access times matter

So the memory capabilities of the computer may not be fully utilised by the software. This principally affects run-time performance; everyone wants their computer to work faster. And the computer will work faster if you can minimise the amount of time it spends reading from and writing to disk.

Put crudely, a computer works by fetching instructions from memory into the processor (with any data that may be required) and executing them. Moving electronic data to and from disk is a lot slower than moving it to and from memory. That's partly because the disk read/write head has to be moved to the relevant spot on the disk, and electromechanical activities will always be slower than all-electronic operations like accessing a RAM chip. In addition, many more processor instructions are required for a disk access.

That's why access time for disks is rated in microseconds (10^{-3}) while RAM accesses are rated in milliseconds (10^{-6}). In short, the more the disk is involved, the slower things will be; if the disk operations can be minimised by keeping as much disk data as possible in memory, things will speed up.

You can do some fine-tuning with MS-DOS to affect the frequency with which programs have to access disk; in particular, you can tweak the number of FILES and BUFFERS in the CONFIG.SYS parameters — see APRICOT FILE Release 3.4. But there are software tools available for much more dramatic improvements; they can make better use of the available memory and thus increase disk and machine performance. These types of programs are known as *RAMdisks*, which use a section of memory as if it were a disk; and *disk cachers*, which are rather more clever than MS-DOS about which bits of disk files are held in memory ready for use.

But note the caveat above: these utilities make better use of *available* memory. So Rule One for using these techniques is — make sure you have as much memory as you can afford, up to the Apricot's 896KB limit if possible.

RAMdisks

RAMdisk software sets aside a section of RAM for its own use. The software establishes a FAT (file allocation table) and a directory; and MS-DOS then operates as if this marked-off area were actually another disk drive, recognising it by the next available drive identifier — usually drive C: in the case of Apricots. (RAMdisk is sometimes known as a 'virtual' disk, contrasting with a 'physical' disk. You may also come across the phrases 'silicon disk' or 'solid-state disk' as synonyms.)

RAMdisk can be accessed at a estimate at least five times faster than a floppy disk and more than twice as fast as a hard disk. Data and programs can be written to and read from this 'disk drive' as normal. You can use DCOPY, COPY, DEL, CHKDSK and most of the other normal disk utilities (FORMAT is the main exception). And you can tell SuperCalc or SuperWriter or any other program to load from and save to RAMdisk.

All good things have a catch, though. One of the big attractions of a physical disk is the way information is stored more or less permanently when you save it to disk; but RAMdisks live in RAM. As with any RAM, something has to be loaded in before it can be used; and everything held in the RAMdisk is lost when the computer is rebooted or switched off. (You do come across battery-backed

RAM disks — the so-called 'BATRAMS' — but not very often, and not at all for the Apricot as far as we know.)

That's why RAMdisk usage requires existing files to be loaded before they can be used. More important, it also demands repeated backups to physical disk to save data and to preserve any alterations to files. And that additional step has to become a regular habit — it's all too easy to forget that you're using volatile RAM rather than a conventional disk.

It is of course possible to enforce good habits and/or automate procedures, for instance by using batch files to back up RAMdisk files on to floppies at the end of any task.

From this we can deduce Rule Two: any alteration to a RAMdisk file is not permanent until it is copied back on to a real disk.

And Rule Three follows naturally: don't use RAMdisk for any file that can't possibly be reconstructed easily.

A second consideration is that you're unlikely to have enough free memory to run a RAMdisk as large as a real floppy. You may be able to set aside no more than 64KB, for instance, and for some of your programs and data files that simply won't be sufficient.

There's an absolute limit imposed by DOS on the total amount of memory the Apricot can have, and that applies irrespective of what the memory is used for. A RAMdisk has to co-exist with everything else in memory — the operating system, applications, data, and terminate-and-stay-resident programs like Ansible's HARE. In practice, you may also find that some applications sneakily create temporary files in memory while they're running; so everything looks hunky-dory when you start off with MS-DOS *and* HARE *and* a database manager *and* a RAMdisk all in memory at the same time ... but you can be mightily surprised when the file manager crashes with an 'out of memory' message because there isn't room for the temporarily working files it needs to set up.

So here's Rule Four: you will have to exercise some care about precisely what you keep in memory at one time, and especially about what you keep in RAMdisk.

These constraints mean that RAMdisk can't necessarily be used simply as an additional general-purpose disk drive. Your object is to cut down the amount of times you have to call the disk, though, and there are specific applications which are most appropriate for RAMdisk.

- **Commands and utilities.** These files are usually quite short and don't normally require any associated data files; they can fit quite happily in RAMdisk, and in fact RAMdisk is an excellent (temporary) home for frequently-used utilities so that they load faster. The classic example is COMMAND.COM — see the article in APRICOT FILE Release 2.3 and subsequent correspondence in 2.5 and 2.7 on how to do this.
- **Application programs and their auxiliary files.** As these files are not continually updated or changed, there is no risk by having copies of these in RAMdisk; you'll have the originals on floppy. RAMdisk represents a good use for unchanging files like programs. On the other hand, the RAMdisk may not be large enough to accommodate them, and some fancy footwork may be required to look elsewhere for overlay files and the like.
- **Data files.** In principle, there's no reason why data shouldn't be held in RAMdisk. In practice, most data files will be too large to co-exist in RAMdisk with the relevant application program.
- **Transient files.** These are files that are set up temporarily by an application program — and usually the reason they're created in the first place is because there is no room in the RAM area for them. RAMdisk provides the short-term storage such files need.
- **Housekeeping.** A highly practical use of RAMdisk is for disk housekeeping — in particular, tasks like file copying. RAMdisk is essential for copying on single-disk machines; and copying between floppies is faster than using a hard disk as a temporary intermediary on an Xi with only one floppy drive.

In summary, then, Rule Five states that RAMdisk will be most useful for ...

- **— fast access to frequently-used utilities**
- **— files that rarely change**
- **— temporary files**
- **— housekeeping**

Another potential drawback lies in the practicalities of RAMdisk programs; most are limited in the size of RAMdisk they can set up and in the number of files you can store therein (more specifically, the number of directory entries that the RAMdisk can support).

In this context, the article by Ted Webber in APRICOT FILE Release 2.5 is worth a read; he compares Alan Solomon's SSDISK (available from DEALS FOR READERS), Apricot's own RAMDISK.SYS and the White Crane Systems RAMDRIVE.SYS. Interesting variations between the programs include their capacity. SSDISK allows you to specify the maximum number of files with no default; RAMDRIVE also allows the maximum to be determined but includes a default of 63.

It becomes obvious that even among RAMdisk programs a careful decision has to be made about how you use your memory and how often you want the RAMdisk to come into play.

Disk cachers

Disk cachers also take over a chunk of RAM in such a way that neither MS-DOS nor your programs notice what's happening. The cache effectively fits between DOS and your disk drive; the cacher program looks for any disk reads requested by the operating system and snatches a copy of the information before it's passed on to MS-DOS.

So what? Well, MS-DOS reads information from disk one sector at a time — and it can't read any less than that. Frequently the information it actually wants occupies rather less than a full sector, so DOS is wasting time reading too much at once. But the *next* bit of information it needs will often be located in the same disk sector; so the operating system will have to re-read the whole sector again. If it can do the reading from a cache in RAM, it won't be operating any more efficiently — a whole sector will still be read — but it *will* work much more quickly, because it doesn't have to go through the whole electromechanical disk access.

Disk cachers won't help at all in some cases — notably with DCOPY (or DISKCOPY), for they read and write a complete track at a time anyhow. But most applications don't; and cachers work really well for the kind of information which will be stored sequentially on disk, things like word-processed text, database files and spreadsheets.

What's more, some disk caches are brighter than the operating system. They intercept a DOS disk access, and instead of taking a copy of just one sector they pick up a whole *track* — which means nine sectors in the case of double-sided Apricot disks.

Caches work rather like the BUFFERS command in CONFIG.SYS, and in principle disk buffers are a form of caching — but a technically inferior one. When it needs another buffer, MS-DOS wipes the one that has been used least recently; cachers will wipe the area of cache containing the *information* that was least recently used. The difference may seem subtle — the DOS approach works simply on the basis of time, the cache operates more pragmatically in terms of the least used *data* areas. But disk cachers provide much better performance than MS-DOS buffers.

And now the bad news (though it's not too bad) — the one and only disk cacher we know for the Apricot is Microcosm's MicroCache.

In short ...

RAMdisks and disk cachers are alike only in that they both work in RAM and can improve disk operation. They do that in very different ways, however:

- In operational terms, RAMdisks work with complete files; disk cachers work with parts of a file.
- Disk cachers are loaded once (you'll generally need a DEVICE= entry in CONFIG.SYS, plus a command line in your boot-up AUTOEXEC file). You can then forget about the cacher.
- RAMdisks work just like any other disk. Again, you usually need to add the relevant lines to CONFIG.SYS and AUTOEXEC.BAT; but thereafter you need to work at using the RAMdisk — loading, saving, and making sure you won't lose anything you need when switching off or rebooting.

Last words

And if you don't have enough memory to run both RAMdisk *and* a cache, which should you go for?

Overall, you're most likely to see improved performance from the cacher: it affects virtually all disk read/write activity, a RAMdisk benefits only those operations involving complete files. And cachers are easier, especially for non-expert users. Once it's there, you can forget all about the cacher; it works automatically. With RAMdisk, the user generally has to be a lot more positive. ◆

Comms Corner

News for comms users

Minimodem

They're all the rage in the States, but the UK has yet to see a BABT-approved miniature modem. At least one American modem, the **Discovery 1200P**, is being imported; it's battery-powered, supports 1200bps full-duplex V22 operation, weighs a mere 4oz, and claims full Hayes-compatibility. No BABT sticker of course, but the **£99** price-tag looks seductive. Contact **Digital Matrix** on **021-704 1399**.

Cheap V23

We first came across **Dataphone** at the *PCW* Show last year, a small stand selling the Demon II modem — nice people selling low-price modems with features for which you'd normally pay half as much again. Now from Dataphone comes the **Designer**, an upgrade on the Demon but still recommended to retail at under **£100**. It's a V23 model — handles 1200/75 and 300/300 as well as 1200/1200 half duplex for bulk uploading — with autodial and autoanswer. And it has some nice features: built-in power supply, mains on/off switch, and automatic or manual speed selection (in automatic mode the Designer select the correct rate for either sending or receiving). No Hayes-compatibility, though. We've asked for a review unit and will report — at that price, we'll also add it to our DEALS FOR READERS lists if the thing is as good as it sounds. Meanwhile, Dataphone is on **0733 230240**.

More modems?

Prices like those might help the spread of comms. Despite all the hooplah, it seems that the modem revolution isn't happening quite yet. Unit sales of all types of modem increased by only **eight per cent** between October and November 1987, according to market researchers **Romtec**. A more generalised report from market forecasters **IDC** confirms that trend, predicting only an annual growth of only four per cent in modem shipments during the next five years.

See all about it

Also from BT comes an educational package called **Understanding Data Communications** — a cross-referenced book and video cassette which takes the viewer from the basic techniques of data transmission to understanding statistical multiplexing and networking. It does it rather well, too. The video is based on an office environment with a rather knowledgable couple explaining the various techniques involved through demonstrations, animations and diagrams. The package is very well designed; it does cost **£120**, however. Available in BT's *BuyLines* Catalogue or from **01-281 4242**. %

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Readers' Tips

Your chance to share

SuperCalc to Symphony

This tip may help those moving from SuperCalc to Symphony.

In SuperCalc, once a cursor direction has been selected the use of the Enter key continues movement in the same direction; in Symphony, it doesn't. But here's a simple macro procedure to make Symphony follow SuperCalc's lead: enter this in cell Z1 ...

```
{?}~{down}{branch \d}
```

Then use Range Name Create to give the name **\d** to cell Z1. Now enter Macro—**d** and every time Return or Enter is pressed the cell pointer will move down.

Repeat the process in different cells for \r, \l, and \u to get right, left and up movements.

The numeric keypad can then be used fully to enter a series of numbers without risk of changing columns or rows if you press the wrong cursor movement inadvertently. (Note that to cancel a macro you can use CONTROL-STOP — equivalent to {BREAK}.)

G M Sturges
Switzerland

FORMAT funnies revisited

Following Alan Solomon's revelations on FORMAT in the last APRICOT FILE, I checked all my disks with SCAVEN.COM (yawn). Fortunately all returned zero bad blocks; but we have had a few irritating incidents in the office which might be attributable to unmarked bad blocks on 3½in Apricot disks.

Here is a batch file I knocked together to format and check disks. Originally it was developed as a means of protecting the computer novice from the FORMAT command. If used on a local network, it is a good idea to rename FORMAT.EXE to KILLME.EXE or whatever else you think will discourage people from meddling!

I have assumed that data disks will be formatted to the IBM 3½in standard in the interests of future compatibility. (Warning: my copy of Ansible's DOCTOR program can't read the disk directory of IBM-format disks — so this is strictly a short-term expedient unless you can guarantee never to make a mistake!)

F.BAT

```
ECHO OFF
CLS
IF %1X==X GOTO EXPLAIN
IF %1==data GOTO DATA
IF %1==system GOTO SYSTEM
IF %1==ape GOTO APE
IF %1==DATA GOTO DATA
IF %1==SYSTEM GOTO SYSTEM
IF %1==APE GOTO APE
GOTO EXPLAIN

:DATA
FORMAT B:CR07QL6 /I
GOTO FINISH

:SYSTEM
FORMAT B:CR07QL6 /SA:
GOTO FINISH

:APE
FORMAT B:CR07QL6
GOTO FINISH

:EXPLAIN
ECHO
ECHO
ECHO  Correct syntax is:
ECHO    F DATA
ECHO      to format a data disk in drive B:
ECHO      (IBM format)
ECHO    F SYSTEM
ECHO      to format a system disk in drive B:
ECHO      (Apricot format)
ECHO    F APE
ECHO      to format a data disk in drive B:
ECHO      (Apricot format)
ECHO
ECHO
ECHO  NOTE: when formatting a system disk,
ECHO  you will be prompted to insert into
ECHO  drive B: a disk from which the system
ECHO  tracks will be copied.
ECHO
ECHO  Use F APE to prepare Apricot-format
ECHO  disks for use as backups of system disks.
ECHO
ECHO  DISKCOPY only works with disks of the
ECHO  same format.

GOTO END

:FINISH
CLS
ECHO   About to check for bad blocks —
ECHO   press a key when prompted

SCAVEN B:
CLS
CHKDSK B:

:END
```

One further tip: I have used my postcode and house number (Police Neighbourhood Watch format) as the disk volume — it could help trip up one of the neighbourhood burglars. In the office we use the project title as the volume label. Well, it might be of use to somebody.

Mike Florey
Croydon

Mixing memory-resident utilities

Three of the more useful utilities available on the Apricot are Ansible's ACOLYTE, Microcosm Research's MicroCache, and Micro Expansions' WORK-ME.

I found that it is possible to have all these utilities in memory *and* run the Palantir Word Processor as well — provided that ACOLYTE is temporarily removed (a) while using Palantir's Speller or (b) if control keys are likely to be used in WORK-ME. These notes indicate the procedures for setting up an appropriate AUTOEXEC file on a twin-floppy Apricot, and may also apply when using other word processors.

CACHE: the Dataflex version of MicroCache was not copy-protected. So it can be incorporated in the boot disk's AUTOEXEC with 268KB allocated to the cache, 500K left in RAM, the ACOLYTE screen enhancer enabled, and no allocation for the printer buffer (to allow more space in memory for Speller when it is used).

ACOLYTE: Ansible's utility was reviewed by Terence Green in APRICOT FILE Release 2.9. This can also be included in an AUTOEXEC.BAT; the boot disk incorporates ACOLYTE data file(s) and other utilities useful to have on the A drive for use with data disks in drive B — the monitor-blanking, date and clock display, and the ability to transfer the date to a document are particularly handy; the KEY feature to assign strings to Control and Shifted numeric keys provides an addition to the LEXICON strings in Palantir. The editing is best done in MS-DOS, otherwise the delete key is not operative. (Incidentally, the ASCII feature that allows character codes from 128 to 255 to be incorporated in the text in conjunction with the PRINTER program does not work with my Epson FX-85, due I think to a conflict with the control codes used by Palantir; but it could work with other word processors.)

WORK-ME: This is the renamed WORKMATE reviewed by Roger Gann in APRICOT FILE Release 2.4. It requires MS-DOS 3.1 and BIOS 3.1. As far as I'm concerned it would be more useful if the address book was in a format which could be used for printing labels; and the AUTOEXEC.BAT is complicated by the copy-protected WORK-ME disk.

AUTOEXEC.BAT

```
REM  Palantir with ACOLYTE and option to include
     WORK-ME and CACHE
REM  Acolyte instructions follow:
AC C D W L M
REM  Load WORK-ME Master and subsequently use W
     (for PALANTIR)
REM  or continue with W.
REM  Remove ACOLYTE before using WORK-ME or
     SPELLER.
REM  While using WORK-ME, replace Palantir with
     WORK-ME Data Disk in A.
```

Whether using Palantir, SuperCalc 3, dBASE II or 1-2-3, it's my practice to have a 'Boot Disk' containing the relevant MS-DOS system tracks, the working copy of the software, appropriate utilities, and AUTOEXEC.BAT — keeping all data files on drive B. Again, because it is copy-protected I have to insert the 1-2-3 Master Disk after booting.

Although the MicroCache Master Disk is also copy-protected, it is only necessary to place it in drive B drive while booting (with the command CACHE in AUTOEXEC.BAT); this does not operate with WORK-ME.

E A A Kimber
Pinner, Middlesex

Contributors in this issue

Dennis Jarrett is Managing Editor of the TP Group newsletters and a frequent contributor.

Roger Gann works full-time running the DEALS FOR READERS section of the newsletter and doubling as Technical Editor — as well as contributing words, ideas, humour, hints, legal advice, spittle for mass-mailings, etc.

Terence Green is an unemployed Apricot owner (currently looking for a job). Formerly an unlicensed truck driver in Lesotho, he started on IBM 370s and worked his way down to micros; these days he minds the kids and scrapes a living washing dishes (and writing occasionally for APRICOT FILE).

Garret Keogh is the staff writer for TP Group, a computer enthusiast and general dogsbody; since coming to TP he has acquired more knowledge about desktop micros and envelope-stuffing than he ever thought possible — at the grand old age of nineteen he is adding to his computer education through a long process of trial and error(s).

E.A.A. Kimber is a chartered accountant, Apricot user, and long-time subscriber to APRICOT FILE.

David Langford is a full-time author and computer addict, whose latest book *EARTHDOOM!* — a spoof of disaster novels, written with John Grant and scorned by Kingsley Amis — is "by no means" about Apricot BIOS variants. (The inclusion of a permanently drunk character called Apricot should not be misinterpreted.)

Simon Potter is a business systems consultant with a speciality in word processors, file managers and spreadsheets.

Guy Sturges worked as a programmer for the largest software house in England before moving to work on telecommunications, systems and programming in Geneva. Guy purchased an Apricot PC in October 1986 ("it was only then that they were a reasonable price") and is putting all the pieces together to make it work as it should.

How to do it:

Install a 20MB hard disk in an Apricot PC

By Roger Gann

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

Installation

Warning: a hard disk drive is a delicate mechanism — be gentle with it!

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

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

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

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

5. Remove the front bezel. This is held on to the sub-assembly bridge by a couple of self-tapping screws. The springs which assist the shutter also have to be removed: don't lose them! Unless you buy a brand-new Xi-type replacement front bezel, it will need trimming — the lip surrounding the disk drive slot projects too far rearwards and thus fouls the front of the new hard disk. Use a sharp Stanley knife to trim the lip by about 5mm. Take the opportunity to wash the bezel.

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

7. The 3½in hard disk has threaded fixing holes on its top side and at each side. There are now two possibilities: you can either 'hang' the drive from the bridge, or you can re-use two of the side fixing holes in the bridge. If you wish to hang the disk drive from the bridge (like a real Xi) you must drill four holes at appropriate centres in the bridge to take the UNC fixing bolts supplied. The fixing holes in the sides of the bridge which are used to hold the floppy disk drive are just 1 or 2 millimetres too close to each other. We suggest that you drill out the two rear-most holes to produce a slightly over-size hole. The hard disk can now be side mounted, installed up-side down.

8. The floppy disk drive power connector will not fit the new hard disk and has to be changed. Unplug the A drive power cable from the motherboard. Use a pin to push out the four pins from the rear of the white connector at the disk drive end and cut the pins off. Solder the cables to the four loose pins of the hard disk power plug. Viewed from the pin side, the sequence is as follows:

   Yellow | Black/yellow | Black | Red

9. Push the pins into the rear of the plug. Plug the power cable back into the mother board.

10. Plug the ribbon connector onto the pins of the controller card, aligned so that the ribbon points towards the motherboard; then plug the controller card into a free expansion slot.

11. Carefully route the two ribbon cables around the power supply unit and leave the ends loose. Use an elastic band to tidy up the loose end of the now-redundant floppy disk drive A connector.

12. Reassemble the disk drive sub-assembly — replace the four bolts and the various cables. It is virtually impossible to get them round the wrong way; as a guide, note that the red edge of the ribbon cable goes to Pin 1 (all the plugs have numbered connectors). Connect the power cable and the two ribbon cables to the hard disk.

    If you are also replacing a single-sided disk drive with a double-sided, you'll see that the Sony D31 (single-sided drive) has a two-position switch and the D32 (double-sided) has a four-position switch. Generally, drive A is indicated by switch position 1 and B by 2.

Testing

Generally speaking, *any* 3½in hard disk drive can be fitted in an Apricot — though it must have the normal ST412/506 interface (you can't fit drives that have the superior SCSI interface). The original Xis were fitted with Rodime 5MB and 10MB units, sourced literally across the road from the Apricot factory at Glenrothes. The drive we usually fit with the DEALS FOR READERS service is the Miniscribe 8425, a 20MB disk with a fairly nippy 68ms average access time — we can alternatively supply the 40ms Miniscribe 8425F to special order (this then elevates the disk performance to that of a respectable 80286-based AT-type machine).

Once you have installed the hard disk, the next job is to get the controller card to talk to it. Apricot PCs incorporate a floppy controller on the motherboard; interestingly, the PC-286 upgrade incorporates the floppy *and* the hard disk controllers on the motherboard — but not the Xi. A separate hard disk controller card is required and steals one of the precious expansion slots. A small bonus however is the way Apricot's controller is capable of handling two hard disks.

A low-level format program, sometimes referred to as a 'factory formatter', introduces the controller to its hard disk. The standard FORMAT program can't achieve this; whenever you use FORMAT on a Winchester, all that happens is that the File Allocation Table is re-initialised.

A factory format does much of what FORMAT does to a floppy disk. You also get the opportunity to lock out bad sectors on the hard disk so that MS-DOS doesn't use them. These are usually listed by the manufacturer on a sticky label attached to the hard disk itself; you can either enter these directly when prompted by the factory formatter, or you can use a diagnostics program to hunt for them and update the 'bad sector label'. The clever LABEL.COM on DEALS FOR READERS disk AP027 also allows you to tamper with this portion of the hard disk.

When the factory format is completed, you then run the conventional FORMAT. The final version permits you to partition the hard disk as a bonus though I've never had cause to use it. If you enter FORMAT A:/SB: the program will then pull an operating system off of the disk in drive B.

Back to the plot.

13. The hard disk supplied by APRICOT FILE DEALS FOR READERS comes factory-formatted and with a bare operating system installed; when you switch on, the hard disk should spring into life and the normally hidden red 'activity' lamp will light up.

In fact, if the installation is correct the machine should boot from the hard disk without further prompting. If that doesn't happen, the drive assignments are wrong (it may be that both the floppy and the hard disk are being treated as drive A!); switch off, choose a different switch position on the floppy disk drive, switch on again, and reboot.

The MS-DOS sign-on message will indicate the total installed storage disk capacity — 20MB hard disk and 720KB floppy, for instance. If it just says '315KB' or '720KB' with no mention of a hard disk, obviously something is amiss. If necessary disconnect one of the drives completely and concentrate on getting the other correctly installed and/or assigned. In particular, go back and check the cable connections — make sure that you have 'caught' all the pins on the data ribbon cable connector.

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

New Boot ROMs

An older Apricot PC will sometimes refuse to recognise the presence of a 20MB hard disk and/or double-sided drives and thinks they're all single-sided floppies. In this event you'll need updated Boot ROMs. These are plug-in chips located on the motherboard just underneath the righthand front corner of the power supply box. To replace them you will have to remove the rest of the chassis.

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

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

16. Replace the old ROMs with new chips (usually VE009) and make sure they're the same way around as the originals. The pins on the ROMs are usually slightly splayed; so offer up the ROM and lightly insert one row of pins into the sockets. Gently push against these with your thumb until you can get the second row of pins in. Now you can firmly push the chip into the socket.

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

Free Small Ads

Apricot Sales

■■■ APRICOT PC — twin SS disks, 256KB, SuperWriter, SuperCalc, GWBasic, ten Fuji DD disks (most unused). £350. Phone 0266 43763 after 6pm.

■■■ APRICOT PORTABLE with single 720KB drive, 768K RAM and Voice Recognition. Plenty of software included. Hardly used. £250. Also 20MB EXTERNAL HARD DISK — £650. Call Frances Clark on 01-946 5755 (day).

■■■ APRICOT PC, twin single-sided drives. All the usual software (MS-DOS, Concurrent CP/M-86, CP/M-86, SuperWriter, SuperCalc, SuperPlanner); plus ASHLEY THE EDITOR, TURBO PASCAL 3.01, various ACT-sourced documentation and Black Hole software, 40 or so reusable disks. Price £200. Also EPSON FX-100 printer £150. Phone 0422 833412.

■■■ APRICOT Xi 10MB, 512KB, 12in monitor, soft carry-cases; impeccable condition. Includes Service and Tech Ref manuals and 5.25in external drive. Original manuals and software; plus unregistered Lotus 1-2-3 v.1a; and WordStar Professional, Multiwrite, SuperCalc, dBASE II, WordPerfect 4.1 and 4.2, Open Access in original packaging. This a 110V model — requires inexpensive 240V mains transformer for Europe. Reasonable offers? Martin Kramer, 15 Deer Trail, Ramsey, NJ 07446, USA.

■■■ F2 — twin drives, 512KB, 9in monitor, mouse, WS3000 modem, Panasonic KX-P1091 (NLQ) printer, F1 and F2 software including Sage Accounts Plus. As new and never used — a nice small-business setup. £1,000 plus VAT. Call 0733 263858, ask for George.

Services

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

■■■ FILE TRANSFER: we can convert files between Apricot single- and double-sided, IBM PC format, PC/AT format, and Sirius — cheap! Call Roger Gann at TP Group on 01-833 3501.

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

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

■■■ A0 PLOTTING — time on a Calcomp A0 plotter available for rent: Sirius or Apricot disks plotted on your paper or ours. Terms negotiable, but cheap. Phone James McEvoy on 01-859 4014 or 01-852 7981; or write to 16 Dunvegan Road, London SE19 1SA.

■■■ DESKTOP PUBLISHING: we can produce your newsletters, price lists, press releases etc in near-typeset-quality on our laser printer using our DTP software NEWSWRITER from your disks in virtually any format produced by word processor and/or computer. Fast turnaround, guaranteed quality, low prices. You're reading an example of our work right now ... Call Roger Gann at TP Group on 01-833 3501.

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

Wants

■■■ URGENTLY REQUIRED — F10 to join two others. Good price paid for a unit in good condition. Phone David Sparks on 0734 62787 or Telecom Gold 81:TWH167.

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

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

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

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

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

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

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

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

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

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

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

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

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

■■■ WORD PROCESSOR wanted for Apricot PC with single-sided disks — MS-WORD 3.0 preferred. Also ANY OTHER SOFTWARE. Phone 01-908 4631

Help

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

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

Use the service!

The Classified Ads service is free to all readers of APRICOT FILE. Just let us have a sheet of paper with the words (not too many); your ad will appear at least once in the newsletter and for around three months in the DEALS FOR READERS broadsheet.

Dealers' deeds

Group sets ...

The Southern Apricot Dealer Group, is a group set up by Apricot's top independent dealers in the South East aiming to "bring stability to the Apricot marketplace and increase customers' awareness of our professionalism".

So says **Glyn Prosser** chairman of the new group, which claims a combined annual sales turnover approaching £40 million. The majority of the members are Apricot-only dealers; and the group says it's working closely with Apricot Top Dog Roger Foster himself. Apparently a number of meetings have taken place, with Mr F commenting that the meetings were very positive. Apparently he also "raised significant issues which the group will address".

At the moment, however, nobody seems quite sure what these issues are. And it's anyone's guess just how closely connected the group is to Apricot itself. Our phone calls hadn't been returned by the time we went to press; and our Usually Reliable Sources at Apricot were unaware of the group's existence, despite the supposed involvement of Roger Foster.

The dealers' press release goes on to claim they will be publishing their own charter (everyone's doing it) to "increase customer confidence in the professional business methods of the group members". That in turn will "enhance the image of Apricot, the company and its products". Which is all very nice for Apricot ... if Apricot has ever heard of it.

If you want to get in touch with the Southern Apricot Dealer Group (hope you have better luck than we did) you could try phoning **01-866 8339.**

... Apricot revamps

And Apricot itself is making yet another change to its distribution arrangements. A year ago Apricot stopped dealing directly with the 300 or so 'Apricot Authorised Dealers' who represent the bottom tier of its distribution structure. Those guys had to get their Apricot products from three 'Master Distributors'. The first change is than Apricot is setting up a fourth source, a wholly-owned operation called **Apricot Direct**, with the intention of taking on another 150 or so dealers who will be handling the low-end products — low-volume sales of plain-vanilla IBM-compatibles.

Meanwhile, the 'Apricot Business Centres' who are big enough and sufficiently sophisticated in terms of selling systems, will continue to deal with Apricot directly. But they're being given new hats; according to MD **Ed Sherman**, the Sequent-based VX9000 and VX1000 parallel-processor systems "need a different kind of commitment from dealers". So around 150 of them will now be 'Apricot Systems Centres, and they'll be allowed to sell everything up to the smaller Sequent, the VX1000. And the élite 30 that remain will become 'Apricot Systems House' and can handle the VX9000 as well. These two groups will also be allowed to take on their own agents, a procedure that the likes of IBM and Compaq already follow their top dealers. ◆

On with the Shows

A round-up of potential relevance

March 1988

22-24 Lotus World *London.* Second running for this introverted show — it was very good last year, and had some 5,000 visitors. *Organiser: Horne & Associates, tel 0256 83456*

22-24 Offshore Computer Show *Aberdeen.* Hardware and software for the petrogas market. *Organiser: Offshore, tel 01-549 5831*

22-24 CADCAM *Birmingham.* Another of EMAP's exhibitions linked to one of its magazines. Held at the NEC as usual. *Organiser: EMAP, tel 01-608 1161*

April 1988

7-10 West Coast Computer Fair *San Fransisco.* The other important Spring event in the US microcomputer world. *Organiser: Interface Group, tel [USA] 617-449 6600*

12-14 Scottish Computer Show *Glasgow.* Catch-all event — much local representation for the local interests, which doesn't usually happen at the bigger English shows. *Organiser: Cahners, tel 061-832 4242*

14-15 Business Computer & Comms Fair *Southampton.* Another local catch-all event. *Organiser: Testwood, tel 0703 631557*

18-20 Mobile Computing *London.* Another first-time show, this one for portable computers and related extras like cellular and conventional modems. *Organiser: BED, tel 01-647 1001*

19-21 Computers in Transport and Distribution *London.* New event. *Organiser: Computers in Transport, tel 0303 45979*

25-30 SICOB *Paris.* France's premier office show includes a good showing for computers and comms, consitutes an excellent reason for being in Paris in the Spring. *UK organiser: French Trade Exhibitions, tel 01-225 5566*

May 1988

10-12 Computers in Manufacturing *London.* Another new event. *Organiser: Independent Exhibitions, tel 01-891 3426*

16-18 Mastering Data Communications *London.* Highly intensive three-day £545 seminar assuming no prior technical knowledge but providing what looks like an excellent grounding in the subject. *Organiser: Network Resource Centre, tel 01-871 2546*

17-19 Micro Cadex *London.* CADCAM on microcomputers — a new event. *Organiser: EDA, tel 01-430 2611*

24-26 Computer North *Manchester.* Catch-all but usually good show at G-Mex. *Organiser: Cahners, tel 061-832 4242*

June 1988

28-30 PC User Show *London.* One of the best exhibitions covering products and services for IBM-oriented desktop computing. *Organiser: EMAP, tel 01-608 1161* ◆

Help GOSH

With this issue you should have a copy of our small contribution to the Great Ormond Street Hospital's Wishing Well appeal. Our regular contributor Terence Green is currently recovering in hospital from a rather nasty operation to remove his colon, and to turn the whole unpleasant process to some use he's running a competition to guess its length.

This is genuinely a good cause. Any and all contributions will be gratefully received by him and us on behalf of Great Ormond Street; and TP Group will match the total raised by subscribers. We're also putting up a token prize of any ten disks from our Public Domain list. Put your hands in your pockets, send money and guesses to our FREEPOST address, and make sure it arrives before the end of April.

Leftwich leaves

John Leftwich, one of the longer-standing of Apricot's top managers and an extremely pleasant bloke to boot, has left the company to take the number two job at Apple UK.

Apricot boasts a commendably low turnover in executives, particularly at Leftwich's level, but the Apple offer must have been attractive. Leftwich had been with Apricot for five years in sales and marketing positions; he was responsible for the Apricot PC launch in 1983, had six months' with the abortive US venture, came back as marketing director, set up and ran the Apricot's desktop publishing operating in November 1986, and for the last three months has held down a new 'group product and marketing director' rôle — in which position he won't be replaced, which suggests that maybe Apricot created the job to keep him interested in staying with the firm. At Apple Leftwich will revert to a conventional title, marketing director; and since the previous incumbent, Keith Phillips, is now Apple UK's MD, John's prospects must be bright ...

Independent service

Ever wonder what happens to Apricot maintenance people who don't work for Apricot Computer Maintenance any more? Some at least went to **Matrix Computers**, an independent which claims 20 years' miscellaneous maintenance experience and a number of ex-Apricot people (including **Doug Ross**, former Field Service Manager for Apricot Computer Maintenance). The standard contract looks good — four-hour emergency response; all labour, parts and travel charges; preventative maintenance visits (which is sensible but unusual); and loan equipment in the event of major items having to be removed for repair. Matrix operates in the South of England and the Midlands, HQ is at **0249 652585**.

Act now (continued)

The latest figures from the Data Protection Registrar shows that the new simplified registration forms — introduced last Autumn — have made a significant difference to registrations. Some 280,000 of the new forms have been distributed, 38,000 replies came back (included 18,000 which stated registration was unnecessary), and more than 20,000 fresh registrations have been received. The DPR says the Register will exceed 160,000 entries by the time you read this, and the estimated of how many there should be has been revised downwards — "we believe that 250,000 might be closer to the figure".

For those who *still* haven't registered, the shorter forms for small businesses are available from Post Offices and the DPR can be contacted on **0625 535777**.

Dial a prize

Yes, its that time of year again: entries are invited for the **Sunday Times/British Telecom Business Phone Awards**. For those who don't know already, the Awards are a national competition to find companies "using telecommunications in a creative and effective way to improve business" in five categories. Last year's Grand Award went to Air Call Medical Services for its dial-up medical info service HEALTHCALL; entry forms from **01-240 8751**, but hurry — the closing date is the end of April.

Software sales

Figures for 1987 software sales in Europe from **Intelligent Electronics** put **Lotus 1-2-3** at the top of the pile, with 123,000 copies sold during the year. Second was **dBASE III** with 99,000 sales. Microsoft **Word** clocked nearly as many (99,100) with **WordPerfect** fourth at 73,200. Among old favourites, **WordStar** did 26,200 sales (to Amstrad users, presumably); and **SuperCalc**'s 30,700 sales placed it a long way behind even **Multiplan** among spreadsheets. And is there really a DTP market? Ventura Publisher wasn't in the top ten, and **PageMaker** only just made it (ninth place, 33,100 copies) even though Mac sales are counted.

WordStar 2000 wins

Meanwhile **MicroPro** is well pleased with an independent report that compared the latest releases of the market-leading WP packages — WordStar 2000, Word, WordPerfect, MultiMate and DisplayWrite. The assessment was done by **InfoCorp**, one of several US 'software testing labs'; WordStar 2000 came top on 11 of the 16 feature criteria, second on three others. It lost out only on page layout (3rd) and print-time controls (4th). That made MicroPro's package "a clear winner in overall applicability", said InfoCorp.

WordPerfect did quite badly — bottom in four categories (ease of learning, document control, page control, and 'global control') and 4th in three more. It's best rating was second, for its print-time facilities. ◆

Some subscribers will have received the February issue of the newsletter in the first week of March. Our apologies for this — it was due to a blunder in the post room.