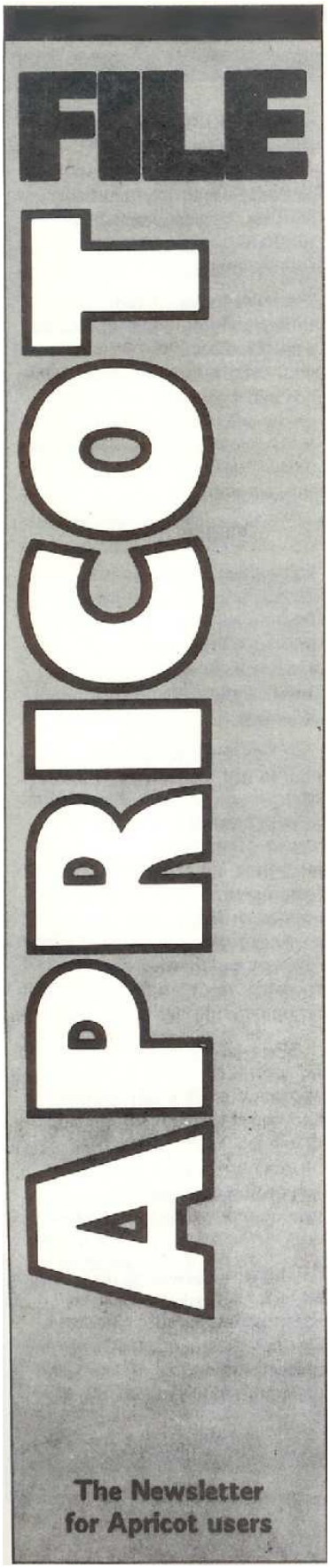
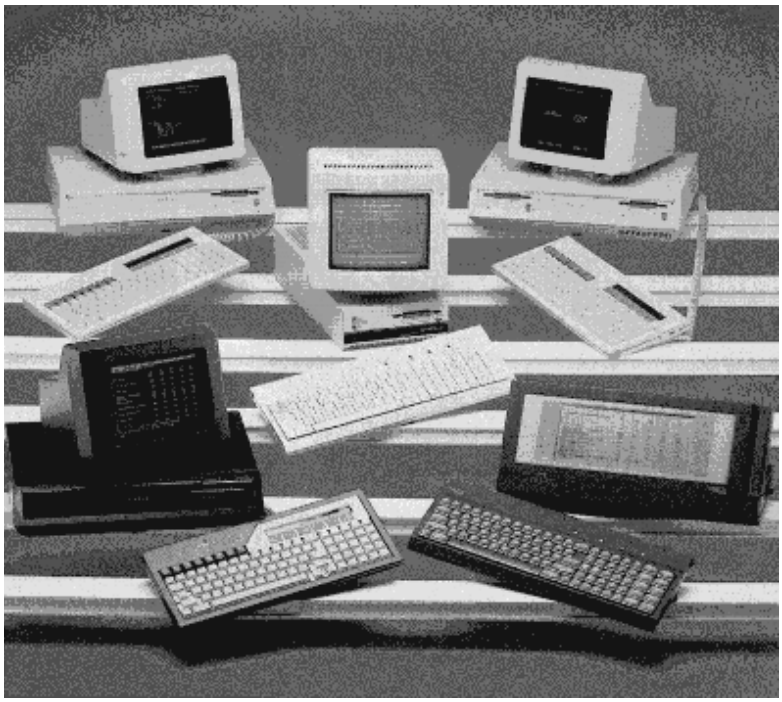


Apricot File 2_7



Scans courtesy of www.actapricot.org

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Release 2.7

FILE

APRICOT

The Newsletter for Apricot users

April 1987

Forty days in the wilderness ...

Fixing the BIOS 2.7 system date bug

By Jim Bracewell

> For every little software bug, there may be one that's worse;
> And every little upgrade brings some future grounds to curse.
> But if you want another way (and to top up my purse)
> I'm sending this to TP Group (sorry about the verse)

There is a crazy bug in BIOS 2.7 that screws up the system date during March 1987 and for a year thereafter. See the *Readers' Writes* pages for more on the effects, but be warned that it's particularly dangerous for BIOS 2.7 users who run accounting packages — many ledgers automatically utilise the system date for backups and in record construction and invoice/statement printing.

Check a few of the files you've been saving during March and make sure they've been getting the correct date-stamp. If they haven't, read on ...

The problem

As those of you with BIOS 2.7 on the Apricot Xi will no doubt be aware, there seems to be a little problem with the date when you boot up (unless you are using an accounting package which date- and time-stamps invoices, in which case the problem can be *big*).

The MicroScreen clock gives the right date and time (assuming your battery hasn't died), but the poor old BIOS seems to have gone mad as a March hare. Inspired by the current vogue for manipulating figures, it begs to differ. Between 1 March 1987 and 29 February 1988, it adds 40 days to the date! Well, we all knew that computer manufacturers like to live in the future, but preannouncing the *date* by 40 days ...

The Official Solution

As usual, forward-looking Apricot plc has the kind of answer that put the company where it is today: "You're not still using 2.7, are you? There's no problem if you use BIOS 3.1".

Upgrading to 3.1 might sound easy enough, but there are a few irritations lurking in the undergrowth. First, you need to get hold of the FORMAT utility — latest version 1.5.3. Then you need a BIOS 3.1 bootable floppy disk. You need to make sure that your new BIOS 3.1 really is 'new' — with a slimline IO.SYS of 32768 bytes, no bigger than BIOS 2.7. (It's difficult to tell, because the file is marked as 'system',

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Fixing the BIOS 2.7 date bug

'hidden' *and* 'read-only'; unless you have the DEALS FOR READERS utility SWEEP, you need to change its attributes to see it.) But let's not get in too deep. By booting from the floppy, you should at least see the BIOS version number in the sign-on message (there's one *circa* March 1986 called 'Test Release 3.1.2').

If the IO.SYS file is too big, you can't do the 'new bugs for old' trick without backing up and reformatting the hard disk first — being careful about which version of BACKUP and RESTORE you use (the really early ones didn't work).

Assuming all is well, and you've either done your backup or decided instead that you really *like* to take risks, you can use the FORMAT utility's /U (update operating system) option:

FORMAT a: /Ub:

Despite the awe-inspiring name of the utility, using FORMAT with the /U parameter *won't* reformat your hard disk (honest, guv. If you *do* want to reformat and update, use /S instead of /U).

So if you follow Apricot's advice, you have spent a day, used up a lot of disks, slowed down everything — and, if you're like me, you've said goodbye to the painstakingly-customised logo which used to pop up at the top right of the screen after every MS-DOS command (courtesy of the escape sequence in your PROMPT $Ei [$p$g). Not to mention anything ladder-driven.

On the plus side, you have a more fashionable operating system BIOS in your no-longer-so-fashionable machine: and you have fixed the date problem as well. It will even read the IBM/Microsoft formatted floppies now. Phew! You still have a few things to learn though, like the fact that you now have to press SHIFT as well as the function keys to get the likes of CALC or PRINT ...

The DIY options

There's more than one way to crack a nut, however.

- A **hardware engineer** would change the battery in the keyboard; and, failing that, replace the entire keyboard. Don't laugh, this seems to work in some cases. Is BIOS 2.7 honestly showing off a hardware feature which BIOS 3.1 masks?
- A **true programmer** would treat this as an opportunity to show his or her grit, and after several sleepless nights would patch the old BIOS to fix the bug - for the challenge - and send the world a free update. Are there no true programmers left at Apricot, I wonder ?
- A **hapless user** would resign himself (or herself) to typing the date anew on every boot-up, every time. The more affluent would buy a new battery for the MicroScreen; the profligate would acquire a new digital watch to be properly informed. If the machine launches straight into Pegasus or whatever, the HU may call in a consultant to de-customise the AUTOEXEC.BAT
- The **manager who's been on a course** would edit the AUTOEXEC.BAT personally and expect a secretary to correct the date.
- The **computer literate pragmatist** would type in the following program (or optionally compile it, after taking out the REM statements) and run it from the AUTOEXEC.BAT file.

This time-honoured approach to problem solving is neither a fix nor a kludge, but a *detour*.

DETOUR.BAS

```
10   REM DETOUR program
20   REM to correct for Apricot Xi BIOS 2.7 bug
30   REM which affects dates from March 87 to
     March 88
40   DEFINT A-Z
50   DATA 31, 28, 31, 30, 31, 30, 31, 31, 30, 31,
     30, 31, 31, 29, 31
60   DIM CALENDAR(15): FOR N = 1 TO 15: READ
     CALENDAR(N): NEXT N
70   DEF FNS$(X) = RIGHT$("0" + RIGHT$(STR$(X),
     LEN(STR$(X)) - 1), 2)
80   DEF FND(X$) = VAL(MID$(X$, 4, 2))
90   DEF FNM(X$) = VAL(MID$(X$, 1, 2))
100  DEF FNY(X$) = VAL(RIGHT$(X$, 2))
110  DAYBUG = 40: REM number of days in error
120  WRONG$ = DATE$: REM get system date
130  REM convert date to figures for calculation
140  DAY = FND(WRONG$): MONTH = FNM(WRONG$): YEAR
     = FNY(WRONG$)
150  IF YEAR = 88 THEN MONTH = MONTH + 12: YEAR =
     87
160  FOR N = 1 TO MONTH - 1: XDAYS = XDAYS +
     CALENDAR(N): NEXT N
170  XDAYS = XDAYS + DAY - DAYBUG: REM make
     correction
180  N = 1: REM now convert back to calendar
     dates
190  IF XDAYS > CALENDAR(N) THEN XDAYS = XDAYS -
     CALENDAR(N): N = N + 1: GOTO 190
200  MONTH = N: DAY = XDAYS: IF MONTH > 12 THEN
     YEAR = 88: MONTH = MONTH - 12
210  IF YEAR = 88 AND MONTH <= 2 GOTO 240
220  IF YEAR = 87 AND MONTH >= 3 GOTO 240
230  SYSTEM: REM No change necessary so quit
240  GOSUB 260: PRINT WRONG$; " (MM-DD-YYYY)
     corrected to ";D$: DATE$ = D$
250  SYSTEM: REM done change so quit
260  D$ = FNS$(MONTH) + "-" + FNS$(DAY) + "-19" +
     FNS$(YEAR): RETURN
```

Happy dating! ◆

Review

Cruising on Freeway

Fully-fledged accounts for £15?

By Terence Green

After word processing, computerising business accounts is perhaps the prime reason for buying a computer. It is also an area strewn with pitfalls for the unwary and the newcomer — if you are not already operating an efficient manual system of ledgers you should *not* buy a ledger package, no matter how cheap.

If you run a manual ledger system but you are falling behind, or are not properly organised, no computer and no software can save you. Transferring confusion to floppy disks is a recipe for disaster; no-one believes that story "our computer has been acting up, can I get back to you..." any longer.

And computerising the accounts won't be quick and easy. Putting your accounts on computer efficiently means extra work if you are to get all the promised benefits — the ability to produce aged debtors and creditors reports for bill-chasing and cashflow control, VAT reports to take the drudgery out of those forms from the Revenue, management reports (from the more sophisticated accounts packages) to monitor progress and help decision-making.

What's more, computers are no faster at the ordinary processing involved in a small business. Entering invoice details via a keyboard is no quicker than putting pen to a ledger card.

The benefits arise in processing speed and report production and it is the quality and adaptability of reporting that should be your arbiter in choosing between systems.

Starting with only one set of books, say a Purchase ledger, will enable the system to run in tandem with your manual system. That will point out potential problems and indicate areas where you'll have to adapt your manual methods. You shouldn't rely on the computerised accounts until you are satisfied that they provide you with all the backup you have been used to on your old system.

When selecting a package it is always advisable to have your accountant advise you on suitability: he or she will be preparing your final accounts in part from the computer output.

What you get for £15

And so to Freeway. Freeway Software distributes accounts software at very low cost: £15 buys two Apricot format 3.5in disks, one holding Sales and Purchase Ledgers and the other a Payroll program.

Once your Freeway accounts are functioning, the stationery for Statements, Invoices, and Payroll can be obtained from Freeway at extra cost.

If you have problems or queries, you can pay extra for a proper manual and "assured phone support" — charged separately for payroll and ledgers (it's available Mondays to Fridays, 1.30pm to 5.00pm. The support also includes the tantalising promise of 'upgrade eligibility', of which more later). Otherwise you'll have to live with the Payroll disk, which contains the Installation procedure documentation and brief notes (four A4 pages) on 'Getting Started' for all three modules.

This software should be termed 'user-supported' and you should not need a manual (£30.00, no VAT) or phone support (£30.00 plus VAT) to install the system. Beyond that, the notes on the Payroll disk make clear you're on your own.

This is not as bad as it sounds. Thousands of companies have purchased expensive glossily-packaged software from suppliers only to be used as development fodder (and charged heavily for the privilege). Freeway makes no pretension as to what you are getting for £15.

Besides, Freeway says the software has been in use for the last six years in many and varied businesses. It's reportedly based on a more conventional accounting suite that's still on sale at more conventional prices.

Getting started

If you have a single-sided floppy, call Freeway before buying this program. The programs for Sales and Purchase Accounting amount to 340KB, and the mandatory SETUP routine doesn't cope well with tampering ...

I tried Version 3.25; the manual was dated November 1986. The Payroll program wasn't tested, but a brief look implied a conclusion similar to that for the Accounts below.

There are clear instructions for IBM-compatible users. The notes for Apricot owners are less clear, and you'd be well advised to TYPE the batch (.BAT) files to see what is going to happen before you rush in.

For twin-floppy users, setting-up proceeds smoothly enough: those with hard-disk Apricots will find the instructions more opaque. Should you wish to keep data files on floppy disk, as many do, you'll run into problems with the installation instructions. Always work from copies of the Master disks and read the batch files first!

Still, the procedure for SETUP is fairly straightforward, and it should present few difficulties. Your company details should be entered. The telephone-number field accepts alphanumerics, so something like (Ipswich) 3345 is possible for those who worry about these things.

Here you also enter the expected maximum number of accounts for both customers and suppliers. These should be planned in advance. Space will be reserved for the maximum number (32KB for 250 accounts) and will be wasted if it's not used; on the other hand, future business

changes may demand more accounts than you want for the present. Space is also reserved for transaction files, apparently in proportion to the size of the account space. There is no indication as to how many transactions can be held at any one time, so be careful if you think your needs are exceptional ...

Do not leave SETUP until your details are correctly entered — there is no facility for amending them at a later date. That should be possible, though you might have to pay for a manual or assured support.

In use

Once SETUP is complete you are returned to the MS-DOS A> prompt. Simply typing 'ACCOUNTS' now brings up the system on your screen and you can choose between Sales and Purchase Ledgers.

Initially Customer and Supplier records should be created, followed by posting of balances (or the outstanding items if you feel the need) from your manual accounts.

Account codes are numeric and there is only one name field; so if you are used to an alphanumeric coding scheme, you will have to adapt. And you cannot list account names alphabetically without some contortions: Barry Jones will not sort under 'J' along with Jokeshop Suppliers Ltd unless it is entered as Jones, Barry. There is a very useful facility to print labels from the account name and address records, but this depends on our Barry not objecting to being addressed as Mr. Jones, Barry! Greater (and more expensive) minds than those at Freeway have lacked this sophistication in their accounts software.

Having made a few compromises in entering your opening balances, you can now try printing aged debtors and creditors reports to check that your totals tally with the manual balances.

The First Golden Rule in accounts systems, as with all working software, is frequent, controlled backups. It is guaranteed that ignoring this principle will bring sorrow to your life. So if your totals do match up, now is the time to use the BACKUP option. Keep that copy safe; it may be the last time your accounts system matches reality, and a 3.5in disk would not cost much to have framed if you become insolvent!

Golden Rule Two says that accounting systems can drive you over the edge before you notice, your view having been obscured by the amount of paper they produce. You can make the same mistakes with Freeway as you might with an expensive program. So check everything you do until you eventually decide to discard the manual system, preferably after at least six months of parallel running.

The documentation does not explore the possibility of a system crash and recovery procedures to take. For most this will mean signing up for support.

The audit trail allows you to follow the progress of invoices through the system. It's invaluable in tracing errors — yours or (God Forbid) the system's. Freeway provides a trail which *can* be followed, though with some lack of clarity. So print everything, especially sales invoices, on two-part paper; and keep a copy at home.

In fact, it is not overstating the case to say that Freeway is optimised for producing paper. If you haven't run through a box by the time you are finished testing, you haven't finished testing.

Pros and cons

If your business depends on efficient credit control or you enjoy paying bills at the last minute, you'll find that some computerised accounts systems are more suited than others. Freeway Purchase Ledger is not geared up for this; and in fact the supplier reporting requests you to load statement stationery in the same screen format as the Sales Ledger before printing out a list of outstanding items. If you wait long enough, your supplier will do that for you!

The cash posting side is open-item, meaning you can apply payments against specific invoices either fully or in part. There is provision for discounts, advance payments, and unallocated cash.

VAT reporting is a useful function, although slightly spoiled by the absence of automatic VAT calculation with a manual override. When entering a supplier invoice total, it is useful — if not *essential* — to have the VAT calculated by the system and displayed. You accept if it tallies with the invoice VAT figure, or you enter the figure from the invoice if it's different. With so many computerised invoices produced these days, it does occasionally happen that an incorrect VAT basis is used for a period before anyone notices and corrects it.

This kind of feature helps you to see whether the Massive Supply Co is charging you VAT at 17 per cent rather than 15. You may think you'll get it back anyway, but maybe you need it now.

If the Chancellor alters the VAT rates you'll need to contact Freeway, for there is no facility to change VAT tables. Nor is there a zero VAT option — essential for some.

All postings are also posted to a control account (a dummy Nominal Ledger). This can be displayed to see balances individually, or printed in whole as a daybook and used to compile manually a simple profit-and-loss account.

Reports are relatively inflexible, and there is no facility for personalisation. Statements and invoices are not really suitable when printed on plain paper, unless you are prepared to explain what all those numbers are (having worked them out for yourself). Freeway supply preprinted continuous forms at a cost (between 11p and 18p per page depending on the number purchased), but you could always transcribe the figures on to your own stationery if you are determined to run a £15 accounts program and amaze your friends — not least your accountant, I should think.

An important feature of this software is the necessity to have the printer on-line at all times — otherwise a warning message says files may be corrupted. This is true, and it's mildly irritating. There are many sources of a printer unexpectedly going off-line (Wadworths 6X being one) and a program which enters a wait state when this happens is preferable.

Other minor glitches include notification of a credit limit being exceeded when in fact the program fails to notice a minus sign indicating that the customer has a credit balance. And the speed of entry is slowed because Freeway will not accept £1.10 entries as £1.1 (but it accepts £1 for £1.00).

Last words

There is an option on the main menu for data validation, recommended by the system as a prelude to close-down. Interestingly, this produces only a total and a brief message that totals balance along with page headings very similar to those you would expect from an aged control account (listing all invoice/credit note transactions). This suggests that Freeway or its progenitors are capable of providing more useful information than is accessible in the basic format.

It seems to me unlikely that anyone will buy a serious accounting program for £15 and then fork out anything from £65 to upwards of £200 for the kind of necessary extras you'll get off the shelf from an established supplier with a conventional approach to marketing. I feel the likely Freeway user would rather tinker with the workings, perhaps with the aid of telephone support or the manual.

Freeway is not perfect, thought that applies equally to several more expensive products of its ilk. But given the way the package is marketed, there's a natural urge for experimentation; and experimentation should not be encouraged in computerised accounts unless you have time and good manual backup.

My advice — if you're a small business user wondering about computerising accounts, don't buy Freeway to get a cheap accounts system. Instead you might treat it as a unique way of experimenting with a package (if you can spare the time) that, unlike demo programs, doesn't clam up after a few dozen entries.

On the other hand, a computer-literate accountant could find some use in Freeway but may be dissatisfied with its range of facilities.

There are some interesting features in Freeway — not least the number of suggestions that there's more available, that the disks are carefully tailored as a taster for a more complete system that costs more. After all, someone likes it enough to have used and improved it over the years. Perhaps someone who falls asleep with the hum of a Basic Compiler flicking through the latest fix? ◆

Freeway extras

Starter Kit [sales ledger, purchase ledger, payroll, 'introductory manual']	£15
Accounts:	
User Manual	£30
Telephone Support [six calls or six months, whichever occurs first. Includes 'Upgrade Eligibility']	£34.50
Two-part invoice stationery:	
1000 pack	£113.85
500 pack	£67.85
250 pack	£44.85
Two-part statement stationery:	
1000 pack	£113.85
500 pack	£67.85
250 pack	£44.85
Payroll:	
User Manual	£30
Telephone Support [six calls or six months, whichever occurs first. Includes 'Upgrade Eligibility']	£34.50
Two-part payslips:	
2000 pack	£103.50
1000 pack	£63.35
500 pack	£40.25
250 pack	£28.75
Year-End P14/P60 stationery:	
100 Pack	£19.55

Freeway

Description:	User-supported Sales and Purchase Ledger package with Payroll.
Supplier:	Freeway Software
Address:	PO Box 33 Wigan Lancashire WN3 4EG
Telephone:	0942 826329
Price:	£15 inc VAT (but see the panel for extras)
Configuration:	Any Apricot with hard disk or twin 720KB floppy disks
Conclusion:	Compares well with many other accounts packages (but is not as good as others), with an adequate albeit restricted and inflexible approach to accounts. The hints at something better and the potential for disaster suggest you should invest at least in the manual; and unless you're confident, given to experimentation and provided with ample time, you might be better paying for a more conventionally-marketed package.

The Disinformation Column

On problems and (sometimes) solutions

By David Langford

One of the funniest biographies of a scientist is *Surely You're Joking, Mr Feynman!*, in which top physicist Richard P Feynman clowns his way to a Nobel Prize through a series of hysterical anecdotes. (Unwin published the book here last year in its special hard-to-find *Counterpoint* paperback imprint: worth looking for.) With tongue partly in cheek, Feynman ascribes much of his success to having a different mathematical toolkit: from an obscure maths text he picked up an obscure way to solve integrals, which often got results when conventional wisdom had failed ...

Though none of us is ever liable to pick up a Nobel Prize for programming, I'm all for a bit of corner-cutting unorthodoxy when looking for solutions. Often the quickest way to sort out a minor glitch is to take short cuts: using ECHO with an escape sequence in a batch file can reprogram a key without using KEYEDIT, or home the cursor, or set up a 'window' in the screen. (Speaking of escapes, may I call your attention to my final paragraph?)

Tiny .COM files, too trivial for a Real Programmer to bother with, can do the same sort of thing in a way which can be called from several batch files. Such midget utilities can also be powerful enough to fix major BIOS problems (see my column in APRICOT FILE Release 2.5).

With a copy of DEBUG, a reference manual, and a bit of detective instinct, you can often patch big programs to clean up faulty configuration or eliminate an unloved prompt like SuperWriter's irritating 'Do you want to create a new document?'. Perhaps a minor problem can be sorted out using a SuperWriter execute file or a WordPerfect macro. (WordPerfect apparently won't 'un-underline' part of an underlined block, or do a search-and-replace on print controls ... but using version 4.2 and native cunning, you can produce macros to do these and many other 'impossible' things.)

And, a favourite last resort in my own programming toolkit, you can achieve wondrous effects by writing a memory-resident program which taps the communication lines between commercial software and MS-DOS, or between MS-DOS and the BIOS, in order to introduce subtle changes and corrections.

This month's tiny COM file

Before expanding on this, I'll just include this column's traditional Assembler listing for yet another teensy .COM file which can be created with any version of DEBUG that has the Assemble option. Someone asked for a way to reset an Epson printer to 'power-on' state from a batch file. You need only send two characters to initialise such a printer: ESC and @. Create INIT.COM with these Assembler commands (see APRICOT FILE Release 1.5 for added details):

```
MOV AH,5        ; 'print character' function code
MOV DL,1B       ; ESC
INT 21          ; call MS-DOS to print
MOV DL,40       ; @
INT 21          ; call DOS again
INT 20          ; farewell, my lovely
```

The real challenge isn't INIT.COM but DONTINIT.COM, the program which *stops* SuperWriter from re-initialising your printer when you don't want it to! This too is possible ...

Langfordian idiosyncracies

My personal toolkit comprises DEBUG, the MicroSoft Macro Assembler (version 4 runs much faster on Apricots than earlier ones) and Turbo Pascal — which as a bonus features a fast, no-nonsense text editor which is fine for batch files and Assembler source code.

C fans tell me I should program in C, but I have a sneaking feeling that there's something wrong with a language in which (a) a single line of code was recently passed round an office of software developers at ICL, all of whom scratched their heads in bafflement as to what exactly it did; (b) programs of only half a dozen lines can contain bugs of sufficient subtlety and obscurity to become the subject of readers' competitions in an advanced programmers' magazine (it was *.EXE*).

The boss of a big software team (all using C because of company policy) asked my Real Programmer pal, "Which do you prefer writing in, Pascal or C?" The reply: "Turbo's best for fixed-price work because of the development speed; when I'm being paid by the hour, as in this contract, I don't mind using C ..."

But then even as a Pascal programmer I have little street-credibility. By all that's fashionable, I should be devising recursive algorithms of breathtaking economy and elegance. It just seems to happen, every time, that the recursive way of coding my problems is (a) much harder to

understand once written, and (b) slower-running. You will find more on this in *Turbo Pascal: Tips, Tricks and Traps* by Rugg and Feldman, published by Que at a scrotum-tightening £18.45.

My Assembler work disk uses a spare copy of Turbo, patched with DEBUG to give files the default extension .ASM instead of .PAS (dead easy: just change the only place where the string 'PAS' appears in TURBO.COM). Editor, Assembler, linker and EXE2BIN are all copied to a large RAMdisk, where everything zips along at gratifying speed with the aid of COM.BAT. This takes an .ASM file and emits a .COM file:

```
ECHO OFF
IF NOT EXIST %1.ASM GOTO BOOB
ECHO BACKUP:
COPY %1.?SM B:BACKUP.ASM
IF EXIST %1.OBJ DEL %1.OBJ
ECHO ASSEMBLE:
MASM %1 %1 NUL NUL /Z
IF NOT EXIST %1.OBJ GOTO FAILED
ECHO LINK:
LINK %1 ;
ECHO EXE2BIN:
EXE2BIN %1.EXE %1.COM
DEL %1.EXE
DIR %1
GOTO FINISH
:FAILED
ECHO ERROR IN ASSEMBLY!
GOTO FINISH
:BOOB
ECHO %1.ASM NOT FOUND!
:FINISH
```

Nothing fancy here: but note the fourth line's nervous backing-up to drive B (you always remember to copy stuff from RAMdisk to a physical floppy *except* when the final .COM file is going to crash the machine); the use of the intermediate .OBJ (object) file as a test that the Assembler's finished without errors; the NUL parameters which suppress bulky listing files; and the /Z which asks for lines with assembly errors to be displayed by MASM.

I use this toolkit a lot for writing memory-resident .COM files which install themselves into the unfortunate Apricot and lurk there wickedly, sinister booby-traps just waiting for their moment ... As my tactful partner Chris Priest put it when I proudly showed him my first efforts: "Gosh, it's just like giving your computer AIDS".

Secrets of Alan Solomon revealed

Memory-resident programs are powerful but sometimes dangerous tools. The technique goes roughly like this (if baffled, refer back to APRICOT FILE Release 2.5, where I explained some of the following horrid jargon):

- Use the MS-DOS 'get interrupt vector' function (35h) to read the actual 32-bit address of the interrupt routine you want to meddle with. Save this address.
- Use the 'set interrupt vector' function (25h) to give the same interrupt a new address, pointing it to your current code segment at a section of your own program which we'll call the interrupt procedure.

It is messy and dangerous to attempt steps 1 or 2 by direct access to the interrupt table at the low end of memory: you should always use the MS-DOS functions. I was boggled when programming paragon Alan Solomon recommended the 'dirty' method in the second issue of *.EXE* magazine and then compounded his blasphemy by including sleazy self-modifying code which was quite unnecessary.

- Use the 'terminate and stay resident' function (31h, also known as 'Keep Process': interrupt 27h works but is less ideologically sound) to halt your program but leave it — or at least the important bit of it, the interrupt procedure — resident in memory. Effectively it becomes part of MS-DOS.

These first three steps comprise the installation procedure, though many bells and whistles can of course be added: screen messages, for example.

- Put something in your interrupt procedure! A plain IRET instruction will simply bounce control straight back to the calling program whenever your chosen interrupt is called: the interrupt function is then suppressed and stops working.

Although sometimes necessary, this is not a 'well-behaved' way to exit an interrupt procedure — it will sabotage any previously installed memory-resident routine which is 'sitting on' the same interrupt.

A jump to a double-word address containing the original interrupt 'vector' (as read and saved above) will pass control back to the old routine: if such an indirect JMP is the only command in your own interrupt procedure, there will be no effect at all (except for a probably undetectable slowing-down of the system as it repeatedly spends a few clock cycles making a detour to your procedure).

The trick is to take selective action depending on what's in the registers: for example, if you wanted to interfere with just one of the many MS-DOS functions called with INT 21h, your procedure could look at the AH register to see if the chosen function has been called. If it has, your evil little program can then make a few changes or take

inappropriate action. If not, control can be passed back to MS-DOS with JMP ...

It's important for your interrupt procedure to *preserve the registers* (all registers used and not intentionally modified must be saved with PUSH commands and restored with POPs — don't worry about CS and the processor flags, which are taken care of automatically) and to *avoid calling* MS-DOS. Since your installed routine is now considered as part of MS-DOS, which is not 're-entrant' — that is, can't be recursive and call itself — disasters lie in wait for the unwary!

The latter point makes it important to learn the BIOS calls to the Control Device — which may mean having different versions of your memory-resident program for different Apricot models, since some Control Device calls are specific to particular machines ... help!

If your procedure needs to refer to its own data storage, remember that DS (the data segment) will be wrong on entry to the procedure: after PUSHing DS for later restoration, PUSH CS followed by POP DS will set it equal to your own code segment — which in a .COM file is where the data will also be.

These guidelines are intended for those who know a bit about Assembler. Until you can write Assembler fluently, avoid trying to fudge up memory-resident routines: even experienced developers can suffer crash after inexplicable crash when struggling to debug the things.

When you've finally managed to get such a program going, you can improve it in various cunning ways:

- Before resetting the 'old' interrupt to point to your own procedure, have your program peek at where the current 32-bit interrupt address actually leads, to see if the program finds itself there (which it will, if it's already been installed).
- Consider the possibilities of intercepting more than one interrupt number and having more than one interrupt procedure in the same program: these multiple interrupt procedures can pass information to each other via stored data. Thus SLACK.COM, an aid to lazy workers, might use both the timer-tick and keyboard interrupts — calling the Apricot sound generator to make loud derisive noises whenever no key has been touched over a period of five minutes.
- People may tire of your wonderful memory-resident routine and wish to turn it off. This can be done by the same .COM file with only a little ingenuity: you need to dig out the original interrupt address from the depths of the installed program — see the first note above for a hint on how to do so — and restore it with another 'set vector' call.
- Experiment with the MS-DOS 'Free Allocated Memory' function call (49h) to remove your program from memory altogether. When you work out how to get back *all* the stolen memory, you will be a Cosmic Master (Second Class).

DEBUG can be useful for testing the good behaviour of a memory-resident utility. Loading DEBUG and typing 'D' followed by a Return will give you a hexadecimal segment number (at the far left, before the colon). Leave DEBUG, load your memory-resident program, and try again: the segment number of the DEBUG workspace will have increased, because the resident program has used up some space at the beginning of the Apricot's free memory.

If the resident program can be 'turned off', do so and look again with DEBUG. The increased segment number may stay the same, in which case the program doesn't actually free the memory it used. The number may revert to the original value, indicating a virtuous and conscientious program which releases all used-up memory and leaves no litter behind it. Or you may get a number between the two, indicating that the memory-resident program restored the memory which it used itself, but wasn't quite smart enough to release the 'environment space' which prefaces every program.

While you're at it, check to see whether a program has the sense not to re-install itself when run a second time. Does the DEBUG segment number get bigger and inexorably bigger each time the memory-resident utility is run? Oh dear me.

The great BIOS plague

All over the country throughout the month of March, panic has been striking Apricot users! "We've had 200 urgent phone calls in the last two weeks," said one service agency. Something very funny has been going wrong with PC/Xi BIOS 2.7 — and perhaps earlier versions? *(We hear that only 2.7 is affected — Ed).*

Although the MicroScreen clock continues to show the correct time and date, the MS-DOS date has moved an inexplicable 40 days into the future. Files are postdated, and — more seriously — so are letters, invoice dates and all other dates set by programs as the result of an operating system 'Get Date' call. The actual date of onset seems to have been variable: one Ansible Information customer reported that the infection had seemed to spread slowly from machine to machine ...

Reportedly, Apricot has been offering two alternative solutions — these being "buy a new

operating system from us for only £40" (it appears that BIOS 3.1 is unaffected) and "just wait until the end of February 1988 and all will return to normal." And several million Ansible customers have rung us, believing with good reason that any hideous and unprecedented software glitch is probably our fault.

So I took a look into the possibilities of a memory-resident correction. Even as I write, guinea pigs here and there are testing LENT.COM, which makes a 40-day adjustment to the system date whenever MS-DOS tries to read it. Stay tuned. (Oddly enough, my own Xi, running the fatal BIOS 2.7, has remained punctual as ever.)

More uses

Here are some other recent uses I've found for memory-resident utilities:

- WordPerfect 4.1 has irritating cursor movement problems on the Apricot. Too many repeating arrow-key commands can 'stack up' and leave the program chugging unstoppably beyond the position you want. Solution: a program to intercept the keyboard interrupt and suppress superfluous arrow-key input, depending on the current contents of the keyboard buffer.
- WordPerfect 4.2 is even more irritating with older F-series Apricots, owing to a deficiency in the documented screen handler (I dare say this has been cleared up with BIOS 3.1). Using an F2 and F10 with the venerable BIOS 1.6 we found that the screen kept going blank with WordPerfect 4.2, invariably in a menu screen. Without visible prompts, you had to key everything in from memory until you returned to the main text.

  It turned out — after I'd written an extremely fiddly resident program to do detective work by monitoring screen-control escape sequences and displaying them on the status line at the touch of a key — that the WordPerfect mob had suddenly started believing Apricot documentation! Between versions 4.1 and 4.2, they'd switched to a fancy form of screen handling that relied on the 'set window' escape sequence... which doesn't appear to work *at all* in this BIOS. An equally fancy resident program had to be whipped up, to monitor attempts at screen control within nonexistent windows, and to perform surgery on the escape sequences so that they did more or less what WordPerfect was expecting them to.
- As one unfortunate learned to his cost, Pulsar accounts software (an official, approved Apricot Gold product) has a very nasty habit. Each time you load it, you're invited to set the date. The usual procedure is to hit Return for the default system date, as read from MS-DOS; you might enter another date if a past transaction were to be put in. Whatever you do, the software sets the system date to the requested value, even if this means no change at all. And guess what — it sets the time just as a bonus, *and rounds down the seconds to zero!* "This means my Apricot clock loses 5 or 10 minutes on a busy day," moaned the afflicted user. Solution: very simple this time. We merely intercept BIOS calls which attempt to alter the system clock and bounce them back with IRET, thus averting the slow loss of seconds and (as a bonus) preventing Pulsar from leaving the wrong date set when you've been doing pre- or post-dated transactions.
- The most unlikely memory-resident item I've seen was apparently written as a response to one of Ansible's jokes about APRICOT FILE contributors who like to end sentences with 'squire'. Know what I mean, squire? A program called SQUIRE.COM turned up anonymously and is truly evil. If you're fool enough to install it and then run the word processor as recommended ... then whenever you hit a full stop, the resident routine apparently slips some extra characters into the keyboard buffer. And that means every sentence ends, well, if you see what I mean, squire. ◆

Join the escape committee

Dennis Jarrett, at whose lightest word empires tremble and the noonday sun grows dim, has asked me to bring you all up to date on the use and misuse of Apricot escape sequences. The venerable article by Friedman Wagner-Dobler in 16 BIT COMPUTING, which also appears on the first-ever DEALS FOR READERS disk, has been partly superceded by a crawling mess of BIOS variants.

So in my next column I hope to issue up-to-date Total Enlightenment on tablets of stone: can you help by reporting any irritating anomalies or useful loopholes discovered in your own use of ESC sequences? Write to me instantly, c/o APRICOT FILE; and do mention which Apricot model, which MS-DOS version and which BIOS number is involved.

Meanwhile, have you noticed that in MS-DOS 3.1 and up, the command CLS not only clears the screen but returns the cursor to top left? Version 2.11 (at least on Apricots) used to leave the cursor in the same position ... No more *laissez-faire* policies for MicroSoft.

Review

A cheap way into Telecom Gold?

MicroLink reviewed

By Brian Read

"Electronic mail is much cheaper than the post" crows an advertisement for MicroLink, claiming also that e-mail is "the cheapest form of communication possible". I wonder if they've tried shouting over the garden wall?

My needs are modest, but to any enthusiast for word processing the idea of sending a file down the telephone line must seem attractive. I decided to try it. Telecom Gold is reputed to be the largest electronic mail system in the UK: the advertising brochure, unlike MicroLink's, does not make extravagant claims about the cheapness of e-mail; it tells you simply that it "can dramatically improve the efficiency of your business" and that it "can help to make your life easier".

Costs

To enrol direct with Gold costs £46 (*though it may come free if you opt for one of the several modems or comms packages that include the first year's subscription as a freebie — Ed*). There is a minimum invoice amount of £10 a month (*for the present, but we hear that this may be dropped shortly — Ed*). MicroLink, a commercial user group which operates on a corner of the Gold service, appears to be a slightly cheaper way in: you can enrol for £5.75, and for this plus a monthly charge of £3.45 you get most (but not all) of the Telecom Gold facilities. You have to pay another £11.50 to use Telex through MicroLink — whereas if you register direct with Gold, Telex facilities are included.

If you've bought a modem or comms software lately you may have found it wrapped in a MicroLink application form which waives the five quid registration fee. So it's possible to use Telecom Gold for only £3.45 a month plus Gold's connect-time charges.

Only? Well, Gold's charges are euphemistically quoted as 3.5p a minute between 7pm and 8am, 11p a minute during normal office hours. VAT is added to these. And there is an additional 2.5p a minute plus VAT for using the PSS network at 300 baud (3p a minute for 1200 baud) if you are calling from outside the London area.

So the *lowest* cost of using Telecom Gold for one minute (evening and night) is about 7.7p per minute when you have added your ordinary telephone charge and VAT. And the equivalent daytime charge is 18.9p a minute (slightly less if you're in London). It will probably take at least two minutes of on-line time to send prepared text to a mailbox.

Suppose you send 100 letters a month to various people all of whom have Telecom Gold mailboxes. Assume that it would take you an average of three minutes on-line for each letter and that you use the service at the cheaper evening rate: 300 minutes at 7.7p totals £23.10.

You may also have incoming e-mail. To read it, or indeed to find out whether you have any at all, you might go on-line for at least two minutes every working day at the cheaper evening rate: 40 minutes at 7.7p totals £3.08.

MicroLink's monthly charge is £3.45. So the grand total is £29.63 per month.

On the other hand the postage on 100 letters by second-class post is £13. Add say £5 for basic stationery, and the total is £18.00.

All these figures are of course extremely conservative. They are the cheapest possible rates, they assume no time wasted while on-line and they make no allowance for the capital cost and maintenance of your hardware and comms software. To a small user, MicroLink's electronic mail certainly doesn't appear to be "much cheaper than the post" or "the cheapest form of communication possible".

Extras

And what do you get from MicroLink apart from the cheap *entrée* to Gold?

As I've already said, it won't turn your micro into a Telex machine unless you've paid the extra registration fee; but MicroLink does enable you to send a 'telemessage' (the modern equivalent of a telegram) at £1.66 for up to 350 words — and a telemessage can be on an illustrated greetings card for an extra 86p.

(Actually, there's supposed to be a sneaky way around the restriction on access to Telecom Gold Telex from MicroLink. If you just use the command TELEX, MicroLink won't let you get any further if you haven't paid the Telex registration. But if you enter 'TELEX' — in capital letters, surrounded by single quotes — you will bypass the MicroLink security filter. Getting on to Gold and entering INFO TELEX HELP will probably give you enough information to utilise the service; don't expect any support from MicroLink or Gold if you get stuck, though ... Ed.)

You also get access to MicroLink's own bulletin board, its 'telebooking' service for British Rail, the

'Floralink' facility by which you can order flowers at any time of the day or night, and other services which you may feel are not going to improve the quality of your life by more than one or two bytes.

By entering GW (for 'Gateway') you get a menu of eleven international databases running on Telecom Gold and into which you can log. They include:

- **Euronet Diane** info from the EEC
- **IDB Online** computer news, updated daily
- **Jordan Watch** company credit-check info
- **Online Airline Guide** fares and schedules
- **World Reporter** an electronic press cuttings service
- **Petroleum Monitor** news about the petrogas business
- **World of Lotus** on-line newsletter and Help line for Lotus owners

There are some useful databases here, but surprisingly the printed booklet that came with my MicroLink password told me nothing about Gateway. Nor did I get any warning about the cost of accessing them. Jordans, for example is £2.30 a minute or part, World Reporter costs £1.32 a minute at any time.

Help

In fact MicroLink's instructions are poorly presented in 18 badly-organised typewritten pages. My questions can go in an e-mail message to a MicroLink Help number (at my expense, naturally). The reply to my first problem advised me to order Telecom Gold's *Electronic Mail Reference Manual*. This cost £6 and is an atrociously-indexed volume of about 95 pages briefly explaining how to utilise Gold's numerous commands and prompts.

To use these effectively and economically I'll either need a good memory for detail or very frequent access to Gold ...

My second request to MicroLink's Help number was prompted by the fact that only a part of some of my outgoing messages were getting through. The reply gave me advice that I discovered later was irrelevant to my problem. I should have been saving my letters to disk in what SuperWriter calls 'System format'; this strips out the print directives and puts a Return at the end of each line, which is necessary for all Gold's mail.

In short, I have not been impressed by MicroLink or its Help service.

One of the most disappointing aspects of Telecom Gold and MicroLink is the way you can only send a message to a subscriber if you know the recipient's number — the electronic directories are inadequate. Most subscribers seem to want to keep their numbers confidential and you rarely see a headed notepaper with a Gold mailbox number quoted.

Telecom Gold itself works well but the instructions leave a lot to be desired. There are a number of simple keyboard procedures to remember. In the early stages I often hit a wrong key, or lost my way as the brief instructions appeared on the screen; then I found myself feverishly hunting through the manuals as the expensive seconds ticked away.

Still, you can find out how many minutes you've been connected during a month by keying USAGE FEB (or any month) at the prompt: Gold then takes about three minutes to come up with an answer. So this enquiry alone has cost you at the very least from 23p to 57p depending on the time of day.

The first time I checked my usage I found I'd used five hours of connect time in the first two weeks. That was mostly to get myself familiar with MicroLink and Gold. So although familiarity has not in this case bred contempt, it's certainly going to breed a hefty bill!

Footnote: perhaps there's significance in the fact that the address for comments printed on the title page of Telecom Gold's *Electronic Mail Reference Manual* is a postal address, not an e-mail number!

The details for MicroLink are in the panel. If you want to talk to Telecom Gold direct, its head office is at 60-68 St Thomas Street, London SE1 3QU — tel 01-403 6777. For £7.50 you can buy a 19-minute video entitled *Electronic Mail has arrived* if you need convincing; you can keep the three-hour tape for your own use. ◆

MicroLink

Description:	Electronic mail service and bulletin board with access to databases and interactive services.
Supplier:	Database Publications Ltd
Address:	Europa House 68 Chester Road Hazel Grove Stockport Cheshire SK7 5NY
Telephone:	061-456 8383
Mailbox:	72:MAG001
Conclusion:	Ignore the claims for economy in the advertising; but if you want to get into electronic mail, MicroLink does provide reasonably cheap access to most of the facilities of Telecom Gold.

Workshop

RS-232: Why is it such a pain?

Part One — Skeletons in the closet

By Stuart Bunt

There isn't much in computing that's as frustrating as your first attempt to connect two devices using the dreaded RS-232 serial interface. Few pieces of computer equipment invite the vitriol usually reserved for the likes of Maggie Thatcher; but the RS-232 interface even has the dubious distinction of a *Spitting Image* song dedicated to it.

And not for nothing is the terminology of sex applied to the rather unerotic objects involved. Trying to mate male and female orifices one is reminded of fumbled teenage attempts at such things in the backs of cars ... particularly the similar lack of success!

Who is responsible for this mess? Who invented 'standards' like this — and, for God's sake, *why*?

The problem is that the RS-232 interface standard was defined for a particular purpose (connecting modems to terminals) when personal computers and the myriad of odd peripherals that individuals are wont to attach to them were just a twinkle in Steve Jobs' eye. Since then, RS-232 has been used for all sorts of uses for which it is ill-suited — to say the least. And because of that, it seems that no two manufacturers have decided to do the same thing with it.

Why serial?

Why use a serial interface at all? The parallel or Centronics interface is much more likely to work at first try. Sending eight bits in parallel more or less matches what goes on inside the computer, after all.

But parallel transmission has its limits. As distances from computer to peripheral (printer, modem, laser-controlled triple-dopplegangered electronic dog minder etc.) increase, the chances are that one of the bits will get a bit enthusiastic in the luxury of its very own line; and when one bit races ahead of its fellows, the result is data corruption.

The serial interface doesn't have this problem. Sending all the bits down one wire in an orderly queue means that they can never get out of turn; and, with suitable error-checking techniques, the integrity of the data can be ensured.

Given that many peripherals and most computers have serial interfaces, how can we go about connecting them? First you need to find out as much as you can about the connections to the RS-232 plug on each device.

To this end I have included the listings for the various Apricot products. These have been gleaned from the technical reference documents to avoid your spending £45 on the manuals to make up a £10 cable.

The RS-232 details for the device you're attaching may lurk in the depths of its manual, but this is often not the case. Don't panic, though — I have found that a phone call or three to the technical people at the company responsible will usually provide the required information. Just don't expect them to understand what they are telling you or precisely how to connect their superwhizzo triple-star product to your computer ...

At the Apricot end

The panel shows how the Apricot's serial interface is connected — it assumes a standard 25-way D-type connector.

Apricot serial interface pin assignments

Pin no.	Name	Function
1	GND	Frame ground
2	TXD	Transmit Data
3	RXD	Receive Data
4	RTS	Request To Send
5	CTS	Clear To Send
6	DSR	Data Set Ready
7		0V [Signal Ground]
8	DCD	Data Carrier Detect
9		+12V [via FS4 — warning: do NOT short out on F series machines]
10	...	[not connected]
11		-12V [via FS5 — note: pins 9 and 11 are NOT connected on PC/Xi]
12	...	[not connected]
13	...	[not connected]
14	...	[not connected]
15		External Transmit Clock [input]
16	...	[not connected]
17		External Receive Clock [input — note: NOT connected on PC/Xi)
18	...	[not connected]
19	...	[not connected]
20	DTR	Data Terminal Ready
21	...	[not connected]
22	...	[not connected]
23	...	[not connected]
24		Transmit Clock [output]
25	...	[not connected]

The *Technical Reference Manual* for the F1 suggests that the pin assignments for the RS-232 connector are the same as for the Xen except that pins 9 and 11 are not connected. But a quick glance at the circuit diagram included in the reference manual shows that pins 9 and 11 are at +12V and -12V respectively. They are connected to this voltage through a diode and a resistor. On pin 11 this is a ½ watt resistor; on pin 9 this is not stated and you short this line out at your peril!

We have a Digisolve CC2123 autodialling autoanswer modem which obviously *does* short out this line — blue smoke rises from an F series machine when we attach the modem. The cause is the imminent meltdown of the poor tiny resistor on line 9. This is not serious, because all that happens is that there is no longer any connection between the 12V and pin 9. So the manual suddenly becomes accurate: *voilà!* Line 9 is not connected any more ... Is Apricot plc cutting costs by making us do some of the assembly (or rather disassembly) work?

This is Apricot's fault and not that of the modem. One of the main tenets of the RS-232 standard is that it should be possible to short out any pin to any other without damaging the interface or apparatus connected to it. If you have an Apricot F series machine and find the idea of blue smoke disconcerting, or if you have some weird peripheral which actually requires 12V on pin 9, cut the wire going to pin nine in the serial cable you use with the modem.

The Xi/PC *Technical Reference Manual* also says pins 9 and 11 are not connected: and, uniquely, pin 17 (External Receive Clock) is also unassigned. Thankfully this is confirmed by the circuit diagram. (Could it be that Apricot overlooked the change when making up the F series manual and just assumed the pin assignments were unchanged from the Xi/PC? And if this is typical of the manual-writers' accuracy, what other surprises await us?).

What does it all mean?

Next you need to work out the meaning of all those hieroglyphics in the 'name' column. For that we need to go back into microcomputer prehistory, when dinosaurs like the Univac still stalked the earth. Back in 1969 the US Electronics Industries Association in cahoots with Bell Laboratories and the manufacturers of communications equipment put together the original RS-232 standard.

The official title of the RS-232-C specification is a meaningful mouthful: "Interface Between Data Terminal Equipment and Data Communications Equipment Employing Serial Binary Data Interchange". In short, the interface was developed for one purpose only — to link a terminal ('Data Terminal Equipment' or DTE) and a modem ('Data Communications Equipment' or DCE).

RS-232 defined the electrical signal characteristics, the common kinds of modem-to-terminal connections, and — most importantly for us — the pin assignments. (Although the physical shape of the DB-25 pin connector is familiar to most microcomputer users, this was strangely not defined by the EIA; it was added later, when the European standards-setting bodies adopted RS-232 as well.)

How does this help us poor mortals trying to connect our Raspberry PC-AT-XLAX supermicro to a Sister-epsume super printer with only a serial interface? Unfortunately, it's hardly any assistance at all. About the only combination of hardware likely to work when all the pins are connected one to another is a straight connection between a microcomputer able to emulate a dumb terminal and a Bell-compatible modem. And even then, the rigidity with which it is applied can be illustrated by the way IBM in its infinite wisdom has configured the PC microcomputer as a *modem* ...

The problem is that the complicated and highly specialised RS-232 interface is most unsuited for the many tasks asked of it. But, as with so many things in computing, a bad standard is better than no standard at all — look at the ascendancy of the awful IBM PC, for Heaven's sake!

The issue is further confused by microcomputer manufacturers continuing to use the often inappropriate terms of the RS-232 definition to describe what they have done to the interface in their particular implementation in the hope that they can kid someone, somewhere, that they have adhered to the RS-232 standard.

The software writers are not fooled, though. They proceed to write code which matches one particular implementation of RS-232 — and which therefore will not run on any other micro even if it has a 'standard' RS-232 interface!

Plugging in

So where do we go from here? Assuming you have found out as much as possible from the manuals and the manufacturers about their particular pin assignments, how do you start?

To get something out of the system, you should initially try to work out if the computer is configured as a modem or as a terminal. The definition is that a data terminal (DTE) expects to transmit data on pin 2 (which might be called TXD or TD). A modem or data communication equipment (DCE) expects to *receive* a signal on pin 2 (RXD or RD).

Do not assume anything, and take no prisoners! Check the manuals to see if you computer is configured as a modem or terminal. The sex of the port is sometimes a clue: female receptacles (must stop while I take a cold shower) are *usually* terminals ... but not invariably so.

If you are lucky enough to have one DTE and one DCE to attach, try connecting pin 2 at one end to pin 2 at the other. Do the same for pins 3 and pins 7. Pin 2 carries data going one way from the DTE device. At the other end, the DCE end, data will be *received* on pin 2; similarly, pin 3 *receives* data at the DTE end which has been transmitted by the DCE. At the other end, the DCE end, data will be *received* on pin 3. And however your RS-232 is wired, pin 7 at one end can always be connected to pin 7 at the other — it *always* carries a COMMON signal.

Minimum configuration

	DTE [eg Apricot]			DCE [eg modem]
TXD	2	transmit data -------	receive data	2
RXD	3	receive data -------	transmit data	3
COMMON	7	----------		7

Sometimes this simple connection can confound us all and work. But what's the point of the other 18 wires?

The answer is *handshaking*. This term covers the conversations that go on between peripherals and computers whereby they tell each other how they are doing, whether they are ready to receive or send information, whether the data arrived ok, and so on.

Perversely I am going to leave you there with your computer (perhaps) talking to the peripheral, sometimes hanging and other times putting out garbage. Next month I'll explain how to get the machines really talking to each other so that they should be resistant to all disturbances such as full buffers, printers going too slow, and the other ills that RS-232 is heir to ... ◆

Classified

Free Small Ads

This Classified Ads section is intended as a service to readers, and for that reason we would rather not accept ads from commercial organisations looking to sell products or services.

■■■ Ads new this month are indicated by solid black lead-in blobs.

Apricot Sales

■■■ APRICOT Xi with two fitted 10MB hard disks, 512KB memory, one double-sided floppy drive, 12in monitor. Complete with Lotus 1-2-3, Delta database system, SuperWriter, etc. £1,100 including Securicor delivery. Contact Paul Rowsell on 0727 22003.

■■■ APRICOT PC with twin double-density drives, 9in monochrome monitor, and 768KB memory. Complete with all the standard software, manuals, cables, 28 spare disks, and a complete SMART (v2.00) suite of software. This bundle cost one careful owner over £2,500 eighteen months ago; I can be persuaded to part with them for only £750. Call Peter any evening or weekends on 0990 28268.

□□□ APRICOT PC — twin drives, monitor, BIOS 2.7 and 3.1, Basic, SuperCalc, SuperWriter, SuperPlanner, Turbo Pascal, many useful public domain utilities. £600 plus VAT ono. Wide-carriage printer also available. Phone 0557 30624 (day) or 06445 244 (evening).

□□□ APRICOT XEN FD needs a good home. Six months old, one careful owner; 512KB memory, dual floppies. Includes all standard software and a copy of A LA CARTE. Price £1,500 ono. Call 01-736 4281 office hours.

□□□ XEN HD with 20MB hard disk, 1MB RAM, paper-white monitor; plus SuperCalc and SuperWriter. Hardly used. Cost £3,500 plus VAT, will accept £2,500 plus VAT. Also available: WordStar 2000 and Epson LQ1500. Contact Mark Wardle on Gloucester 504294 (day) or 411402 (evenings).

Apricot Add-on Sales

■■■ WANTED: keen-eyed punter who knows a good thing when he sees it. Apricot plug-in modem with Communiqué — unwanted gift from Granny. A mere £150. Call David St.John Wallis on 042 873 5255.

□□□ WORDSTAR 2000 going cheap! Apricot MS-DOS 2.11 version, release 1.01. Never used, still in original packaging with manuals and MicroPro guarantee registration card. Only £100. Telephone Mr Lincoln, 061-434 4513 (day) or 0565 51144 (evenings/weekends).

□□□ LOTUS SYMPHONY for sale, brand new with manuals. Highly recommended if you want to combine a database with spreadsheets and WP and you have a hard disk Apricot with 512KB. Reason for sale. £250 inc delivery anywhere in the British Isles. Telephone Bernard Brandon, 0276 27214 (office) or 0276 74156 (home).

□□□ APRICOT-FORMAT SOFTWARE: MicroModeller and dGRAPH (both unused). Also one lot comprising CBasic compiler, Access Manager, Display Manager and GSX manual. Also Epson MX-80 ribbons and 9in black Xi monitor for sale. Best realistic offer secures. Contact 065 122 667.

□□□ 128KB RAM BOARD — full working order, no longer required. £55. Phone Frank Sendall on 051-425 4811 evenings (keep trying if no reply!)

□□□ F1 INFRA-RED MOUSE with light pipe and software. Low mileage, well-behaved. £50 ono. Contact 0734 732512.

Other Sales

■■■ 1962 BSA A10 650cc for £650 (ok, £550). Monza sidecar to fit £100. Call Terence Green on 01-960 0254.

□□□ APRICOT AND SIRIUS DISKS for sale — 5¼in DSDD box of ten £7.50, 3½in DS box of ten £20. Contact Paul Miller on 05435 78926 (day) or 05438 5336 (evenings).

□□□ TOSHIBA TH-2100H high-quality printer and acoustic hood. Buyer must collect (from Milton Keynes). Any offer considered. Contact Eileen Periss on 0908 310866.

□□□ OSBORNE 1 double-density disks, 64K, with SuperCalc, WordStar, MBasic, CBasic, all cables. £250 ono. Tel M Nash, 0742 307692 (home) or 0742 66922 (office).

□□□ COMMODORE 8030 — 32K memory expanded to 96K, twin 8050 disk drives; Pegasus ledgers, Landsoft WP, TLO program generator, CalcResult; all documentation and cables. Good working condition — £500 ono. Tel M Nash, 0742 307692 (home) or 0742 66922 (office).

□□□ WORDPERFECT Ver. 4.1 for use with Xen-i or any IBM-compatible. Unopened and complete. A bargain at £300 ono. Contact I Bryce on 0603 630326 in working hours.

□□□ PSION ORGANISER — original program and datapacks, RS232 link-up, documentation. Boxed. £40 ono. Contact Mike Nash on 01-671 8644 (home) or 01-584 5000 x 3545 (office).

Wants

■■■ WANTED: software for Apricot PC on single-sided disks for private buyer. K R Dodd, 53 Evelyn Drive, Hatch End, Pinner, Middlesex.

□□□ WANTED: Apricot Xi FD or HD with 512K and 9in monitor. Must be in good condition and full working order. Tel M Nash, 0742 307692 (home) or 0742 66922 (office).

□□□ WANTED: Delta 4, TAS, dBASE III or Tomorrow's Office for Xi with 512KB and 10MB. Contact 0379 71246.

□□□ WANTED for Apricot 10Xi: Alpha, Simon or Multicard expansion box. Phone Brian on 0992 468870 evenings.

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.

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□□□ 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.

□□□ SIRIUS-APRICOT TRANSFER: any program and/or data transferred from Apricot to Sirius format and vice versa. Just send your disks along with £5 for the first one and £1 for each disk after that: P&R Miller, 8 Hillside Close, Hednesford, Staffs WS12 4DG.

Help

□□□ SANYO AND APRICOT: can anyone suggest how I might format 3.5in disks so that both my Sanyo MBC-555 and my Apricot can read me? Also, does anyone know where I can obtain Concurrent CP/M-86? Contact Bob Wilcock on 01-888 8304 (evenings).

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

Misc

□□□ COMMODORE CLEAR-OUT — FREEBIES! Come on, doesn't anyone want this stuff? A Spring-clean has thrown up a few items of stock relating to a previous venture in Commodore home computers. Specifically, we have a dozen or so copies of Dennis Jarrett's Complete Commodore 64 book and many cassette dust-covers. FREE to a good home — ie a non-profit cause like a school. Contact Roger Gann on 01-833 3501.

Holidays

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

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Any other comments?

Upgrade Review

More Perfect?

WordPerfect version 4.2

By Paul Lavin

One thing is certain in the fast-paced world of applications software development: you have to run as fast as you can just to stay in the same place. If you rest on your laurels, you'll be the next VisiCalc — great a while back but gone now. 'Don't fix anything unless its broken' doesn't apply in computerland. The motto is more like 'enhance or die'.

Sentinel Software has just released version 4.2 of the seminal word processing package WordPerfect, probably the best WP offering available to the Apricot-afflicted. WordPerfect 4.2 came as a big surprise to the UK distributors when they opened the post one morning; after originally denying that the Apricot edition was in the works, the US marketing people evidently had second thoughts.

Version 4.2 builds on the already full-functioned releases that have appeared previously, and it could be viewed by some as gilding the lily. Still, there are some useful improvements among the esoterica.

What you get

Version 4.2 comes on three disks, none of them copy-protected. Included are a truly huge dictionary and a 10,000-word thesaurus (with synonyms and antonyms) plus a thorough tutorial introduction. Users of 4.1 will have no difficulty coming to grips with the latest release; but those well inured to 4.0 and earlier versions may find themselves needing a period of familiarisation.

WordPerfect 4.2 claims complete compatibility with files created under version 4.1 as well as the cut-down IBM versions, Personal WordPerfect and the £99 WordPerfect Jr. My own tests bear this out. The converse may not be true, however, especially with regard to some of the fancier formatting functions.

Files created under 4.1 and edited by 4.2 are saved in 4.2 format unless you invoke a special item on the Text In/Out menu. Beware of macros created under 4.1 or earlier due to the changes in menu options.

Format control and printing

WordPerfect is a WYSI-almost-WYG word processor. The screen representation is very close to what the printed output will be: page breaks are visible and printer control characters are not shown. Instead, bold appears on screen as bold, underlining as underlining and so on. It's not a 100 per cent accurate representation on the editing screen as the right margin is not justified; but WordPerfect presents little in the way of surprises when the hard copy comes out.

With access from the printer control menu, version 4.2 now provides the option of previewing the hardcopy — including all margins, footnotes, page numbers, headers, footers, and the like. Definitely perfecter. (What a shame Sentinel kept secret the way you get out of this option: don't tell anyone, but it's F9.)

The ability to edit text in columns was one reason I was introduced to WordPerfect many moons ago. Now 4.2 will go up to 24 columns across the page (up from four) in newspaper or parallel style. The command structure has changed subtly but the great improvement is in the documentation explaining the feature.

Among the comforts of WordPerfect is the wide range of printers it supports. One of the issue disks is entirely devoted to providing this depth of support; upwards of 350 different configurations are supported now — and if you just couldn't resist the ultra-cheap Brand X printer (bought in Tottenham Court Road and now the dealer/manufacturer is out of business and no one wants to know) there's a program for constructing your own printer driver. It's not simple, mind you; but if you gotta do it, at least you can do it.

The driver program can also be used to examine and modify an already supported printers' character table. So the Czech alphabet is now within the grasp of all WordPerfect users. But why does the UK edition come with printer initialisation codes that force you into the *US* character set?

Changes in operation

A new feature in 4.2 is the inclusion of the document name on the status line for those of us who can't retain this vital bit of information while editing. It's not a major change, but it shows that the folks back at the factory have been listening to users.

Another enhancement greatly appreciated is the ability to edit command lines. Whenever you ask WordPerfect to list files or save a file it will prompt you with what it thinks you want it to use as a file name, complete with the current subdirectory path. Surprisingly, this works more times than not.

But say you just want to change the file extension. With Version 4.1 or earlier, you would find that the whole command line, multiple subdirectories and all, would vanish at the touch of a key.

Version 4.2 allows you to use the cursor and delete keys to good effect. The same applies to search and replace strings. A welcomed relief.

I really find a lot of utility in WordPerfect's file manager. It's the equivalent of calling up a sorted directory from inside the word processor with highlight bar selectability for any file name or subdirectory. It has most of the handy MS-DOS functions, too — DELete, COPY, change directory and RENname among them — at the touch of a key.

Most helpful is the ability to peek into a file just in case you can't remember just what you hid away in LTR0034.INV.

I have an annoying tendency to highlight my intended victim and unthinkingly 'select' it with the Enter key. That would promptly have me out of the file manager in 4.1; version 4.2 protects me from myself and instead defaults to the 'look' function. Is this a healthy thing? An erosion of free will? 4.2 makes it hard to be stupid.

Often when blocking out a chunk of text, my intentions are to send it down the gravity well of a black hole. The old WordPerfect just will not permit such inhumane treatment. Instead, I have to pretend that I am really just going to move it elsewhere, denying myself the wonderfulness of WordPerfect's undelete function in the event I get carried away.

According to the manual, this deception is not now required in 4.2. Second thoughts on massive deletions *are* now supported, in the manual at least. A pity they aren't supported in the application. Methinks that the authors of the manual should work a little closer with the lads programming in the back room. At least we have something to look forward to in version 4.3 ...

Other extras

A glaring omission from earlier versions was the mail-merger way with null fields. If you left a line blank in an address merge file, you got a blank line on your letter or label: not very impressive in light of WordStar's mastery of this detail years ago. All is fixed now by the strategic use of a question mark.

The spelling checker, fast and easy to use, has lost much of its American bent and is now located approximately in mid-Atlantic. This is not exactly all the improvement you would expect for the price. The redeeming feature of the speller is the instant replacement of the offending word with a single keystroke. Supplementary dictionaries created under 4.1 are completely compatible.

WordPerfect uses the function keys with an intensity difficult to grasp until you're acquainted with the key template. The MicroScreen is well supported too. Sentinel has thoughtfully provided coloured stick-on dots for your CONTROL and Shift keys, greatly simplifying the use of the keyboard — it's much easier for me to use 'green F7' for some reason. Colour-blind individuals could have some difficulty at first.

WordPerfect also helps those who have difficulty cutting the cord with their old word processor; a standalone program called CONVERT does the trick. Along with other additional features, 4.2 also allows the use of wild cards for wholesale rectification of your old files.

Sentinel has styled 4.2 as the 'Professional' version because it incorporates features that are sought by lawyers and the like. WordPerfect can do neat footnotes (kept in association with the annotated text and numbered consecutively, no matter what you do with the text or if you add additional notes), indexing, a Table of Authorities, a concordance, line numbering and a host of other complex things that will undoubtedly save someone a lot of time and effort. I'm afraid that some of these great ideas are just lost on me.

WordPerfect Library

Sentinel's other recent announcement is for IBM-compatible Apricots only — don't write to me, write to SSI. WordPerfect Library costs £147; the name is something of a misnomer (I suppose the company is trying to trade on WordPerfect's name) for this handy little bundle of utilities disguised as an applications management package could justly be called Library, full stop. Although it provides a useful adjunct to the manifold talents of WordPerfect, it has enough going for it to deserve an independent identity.

With the disk in your drive or the files comfortably ensconced on your hard disk (no awkward copy-protection here!) you merely type 'shell' at the prompt to get the ball rolling. If you become a Library addict, 'shell' can be included in your AUTOEXEC batch file.

The shell function allows you to start up any application including options and changes of default directory without weaving the usual tapestry of slow-executing batch files. The template for adding applications to the initial menu is absolutely straightforward. I've tested the start-up function with a dozen or so applications and only one refused to be prodded into life (it was the excellent archiving utility DSBackup. In fact, attempting this locked up the machine. Pushing the button marked Reset was the only way out. Strange).

You can have up to 20 entries on the initial shell menu. But you are by no means limited to this number of applications; every entry on the initial menu could be for a sub-menu which itself could list a further 20 — *ad absurdum*. This is a good thing if not carried too far: sub-menus for games, Norton Utilities or other related programs make good sense.

When you start a program from Shell, the termination of that program sends you back to Shell with surprising speed. Applications started from Shell also seem to load quicker, but that's probably just my imagination.

You can leave Shell and go to MS-DOS to execute one or more DOS commands and then return to Shell by typing 'exit'. A reminder is inserted into your normal prompt to help you remember that you are operating in an MS-DOS shell within Shell.

WordPerfect Library incorporates a memory management feature that can keep you appraised of the state of your RAM to optimise program performance or to alert you to the need for swapping memory-resident applications. Shell supports the Lotus/Intel/Microsoft Expanded

Memory Specification for those pinched by IBM's daft architectural convention.

Library has some SideKick-like terminate and stay resident (TSR) features ... but there's a catch. To use these features you must be using Library-compatible programs. You guessed it: WordPerfect, MathPlan and the other bits and bobs included in the Library package. Other software works just fine, usually, but without the benison of Library's coresidency.

The in-built calculator has to be one of the most awesomely-equipped models in the business. Decimal, binary, octal and hexadecimal calculations are all supported, not to mention statistical, financial and scientific functions. You want to do compound interest in octal with exponential notation? I hope that my mortgage company doesn't find out about this.

The Calendar is the diary/to-do list/alarm and memo manager that is included with Library. The command structure is simple and Calendar can provide well-organised printouts of its contents. It can be incorporated easily into an AUTOEXEC file with macros to run off your lists first thing on start-up.

A clipboard utility is also provided to facilitate transferring information between applications *à la* Borland. The Clipboard can hold up to five kilobytes in memory but will overflow to a temporary disk file — unlike SideKick, which brings you to a screeching halt when you hit the limit.

The nifty mini database manager called NoteBook meshes nicely with WordPerfect's mail-merge facility for the creation and maintenance of address-list info. If telephone numbers are included, NoteBook can dial the numbers for you if connected to an autodial modem.

The format and content of the data input template is freely reconfigurable in case you need to include hat size or other arcana. You can search (using wildcards!) and sort the list, thereby giving you all the features that you could expect in a cardbox style database.

The FileManager option brings the world of WordPerfect's valuable directory management utility to your fingertips without loading surplus word processing features into memory. You can mark files for wholesale manipulation, and carry out the usual MS-DOS commands on them just as in WordPerfect.

An oft-uttered prayer of WordPerfect devotees has been answered with Library — you get a means to edit macros. Until the arrival of this bundle of joy, the only way to change a macro was to start all over again from scratch; and depending on the size and complexity of the automated sequence this could be a nuisance or a national disaster.

The macro editing in Library could save sleepless nights for wordsmiths converting from previous versions of WordPerfect to the newly released 4.2. Weep no more, it's as easy as editing any other ASCII text file with some convenient and powerful specialised commands thrown in to boot.

One minor gripe about the manual, though. There are no fewer than six separate indexes, one for each of Library's main features; and each section has a raft of appendices to accompany it. Surely there must be a better way to organise this material. It's a case of not being able to find what you're looking for unless you already know where to look for it. Familiarity with the product makes using the manual easier. Perhaps it should be the other way around.

But for the WordPerfect user, Library presents excellent value for money as it appreciably extends the power of an already powerful business tool. It's good enough to make me think about taking a look at MathPlan so that I can enjoy the fruits of close compatibility with WordPerfect and Library.

For others who have different favourites for word-massaging or number-crunching, Library still has good value in its applications manager, calendar, clipboard, calculator and database functions.

Last words

Back to WordPerfect 4.2. Despite the complaints above, the documentation is first-rate. Sentinel also provides a degree of telephone support; the people at the other end are seated at a computer and will try running your problem and talk you through the tricky bits. If they can't help, they say they'll call you back. Maybe I wasn't in when they rang.

Yes, it is more perfect than before. At £35 for the upgrade, it's a bargain for current devotees of last year's model. If you are starting from scratch, the recommended list price is £425 — and discount deals abound. But it still won't do the windows! ◆

WordPerfect version 4.2

Description:	Enhanced version of highly-regarded word processor with additions, enhancements and fixes rather than major changes in style
Supplier:	Sentinel Software
Address:	Wellington House New Zealand Avenue Walton on Thames Surrey KT12 1PY
Telephone:	0932 231164
Price:	£425; or upgrade from 4.1 at £35
Conclusion:	Significantly improved — makes an already good program an even better bet for new users or for converting from word processors that are less well specified; and must be a bargain as an upgrade for users of 4.1.

User Experience

WordPerfect Release 4.2 on the Xen-i

By Alan D. Craxford

Regular readers may remember the account of my first meeting with SSI's WordPerfect word processor package last year (APRICOT FILE Release 1.11). My conclusions were that while there were one or two minor quibbles, I had little but praise for WordPerfect 4.1.

I recently acquired a Xen-i. The IBM format meant I've had to change the versions of the software that I use, including the move to WordPerfect version 4.2. So what is different about 4.2 in operation?

The most immediate change is related to the IBM-style keyboard; now the ALT key is operational. This means that the ten function keys have four separate assignments apiece, and the MicroScreen keys do not function at all.

The assignments are quite different to the Xen implementation which makes for initial confusion. The spell checker moves from CTRL-F7 to CTRL-F2. And the position of the ALT key below the Shift key also means that the template is not necessarily arranged in the most logical order. For instance, the assignments for F8 are:

with CTRL	Format Print
with Shift	Format Line
with ALT	Format Page
normal	Underline

The manual is the IBM 4.1 version with a 4.2 update subsection. It would appear that the instructions are still very clear where functions have been altered or superceded, though for a large restructuring perhaps a new manual would have been appropriate. There is, most usefully, a formal section about configuring the printer — a text file on disk was previously provided for printer configuration information.

Version 4.1 is upwardly compatible with 4.2. Files are automatically altered on loading and are then written to disk in 4.2 format; there is a utility which allows writing in 4.1 format should the need arise. The authors also assume that most macro functions will still work satisfactorily although there are minor changes in cursor key movements which may cause problems.

The spelling checker has been "enlarged and improved" although there are still many duplicated words in the main library. It is also somewhat annoying to find American spellings accepted despite the fact that the disk is labelled 'English version'. The thesaurus too has been enlarged,with the inclusion of 10,000 head words and a comprehensive list of antonyms.

Document processing capabilities have been improved. There are now facilities to raise comment 'notepads' within the document, and on saving to disk a summary screen is available for rapid content viewing using the LIST FILES option.

Two documents may still be accessed on separate screens, and a third 'preview' document has been added. This allows assessment of the final document on screen prior to printing. Print options have been increased to allow for parts of documents and ranges of page numbers — for instance you can specify printing of pages 1 to 4, then 6, 8 and 9, then 14 to 17.

There are now two (5.25in) disks full of printer drivers, including support for many of the laser printers. My main installation problem previously had been the apparent control code discrepancies for my particular printer (a Tandy DWP410). What a joy to find that this driver has been completely rewritten and now supports all the features of the printer — including proportional spacing. This may be due to the fact that this is the IBM version of the program and so must be capable of running on the Tandy computers.

Text manipulation has been simplified, with more cursor commands. The tab settings now support seven varieties of tab mark including left- and right-justify (with and without a 'dot leader' to fill spaces) and decimal alignment for numbers (around the decimal point). WordPerfect was renowned for its column manipulation but now there is the prospect of allowing up to 24 columns per page — with improved maths functions it won't be long before limited spreadsheet activities can be carried out within the document on screen.

A 'hard' space has been added which prevents those awkward floating pound signs on text wrap-around. 'Hard' returns may also be shown on screen (with a character of your choice) although personally I believe this is beginning to detract from WordPerfect's uncluttered appearance.

Major changes have been carried out on the indexation facilities. There is now a 'concordance' file in which is stored the words and phrases that will be added to the table of contents. It is now also possible to create a legal-style table of authorities. There is a facility to number lines as well as automatic paragraph numbering.

The mail-merge has one small extra facility of note (the lack of which I commented on previously) — blank lines can be suppressed on printing when the corresponding field is empty.

Readers may well remember the saga of the Apricot function-key template where the 4.1 card had to be cut in half and the positions reversed. The template I received from Apricot was for the IBM PC and the function keys are arranged in two vertical rows: try cutting that up and making sense of the little pieces.

Apart from this, WordPerfect lives up to its name and I can find little fault with version 4.2. I can't imagine where version 5 will take us. ◆

Letters to the Editor

Readers' Writes

Your chance to have a say

Dumb dates

I have just received my latest copy of APRICOT FILE, but am puzzled as to the edition. Has your Real Time Clock failed to operate properly? All through it is dated 'March 1986'. Can we have some corrective stickers in the next issue?

I also have a problem with the real-time clock on my 10MB Apricot Xi. It displays '23 March 1987' on the MicroScreen correctly, but it sends '2 May 1987' to the system. This only occurs between 01/03/1987 and 29/02/1988. It is not the battery, it is not the system unit.

Tony Carroll
Collective Components, Gerrards Cross

In our case it wasn't so much a duff clock as a brainstorm by the Editor. A series of cold showers has restored him to a true appreciation of his age; and with this issue you should receive a collection of stickers as requested. Apologies for the blunder.

As for the duff clock problem, it strikes users of BIOS 2.7. See the lead story in this issue — and the following letter from Neil Mathers, which coincidentally arrived at our offices the day after Tony Carroll's missive.

Dangerous times

Did your system self-destruct on 1 March this year? If so, you have RAM BIOS version D2.7 dated 12 February 1985 or BIOS 2.7 of 21 February 1985 (and if you have BIOS 2.4 or 3.1, you'll be totally unaware of the disasters that struck last month).

While my MicroScreen clock reported '15 Mar 1987', the date shown on the screen was '24/04/87'. I went out and bought a new battery for the keyboard, I backed up 9.2MB of disk completely, I reformatted the disk, I swapped keyboards, and I installed BIOS 3.1.

A few days later I noticed exactly the same fault on a similar Xi. Both machines had previously behaved perfectly, one for over two years.

The light dawned. I changed the date to 15 March 1986, one year ago, and rebooted. No trouble. Check dates forward: is 1988 a leap year? I entered '29/02/1988', rebooted again ... and the date on the screen was '9/04/88', exactly the same offset. I entered the new date '1/03/88' and the bug had miraculously disappeared.

Those of you with BIOS 2.7 and plenty of time can wait eleven months for the bug to self-exterminate. Those with less patience will wait until 10 April 1987 and reset the date to '1 March 1987'. Until then you might care to pillory Apricot plc and the fool writer of BIOS 2.7. Was he maliciously aiming for 1 April and forgetting the ten-day adjustment to the calendar made by Pope Gregory XIII on 4 October 1582? Who knows?

Neil Mathers
Gerrards Cross

Turbo update

To clients of Dr Dobb it's clear that all programs should 'run light without overbyte'. So Sten Ternström's Turbo Pascal patch in APRICOT FILE Release 2.3 should read:

```
- 110
   pop bx     ;  pop return
                 address
   pop ax     ;  pop the only
                 parameter
   push bx    ;  restore return
                 address
   int f1     ;  Apricot says
                 all registers
                 except ax are
                 preserved (at
                 least bp and
                 segment
                 registers seem
                 to be)
   ret        ;  return, no
                 parameter left
```

This is about 0.7 per cent faster (wow!) and it assembles to only six bytes of code (as opposed to 14), which leaves room for at least one more snippet. But thanks for the idea; this is the kind of inspiration I am always looking (and longing) for ...

Jost Riedel
Bad Karlshafen, West Germany

COMSPEC revisited — no. 1

I had heard it said it couldn't be done, so my excitement was considerable when I discovered (pretty much by accident, as these things usually are) that I had managed to persuade my Xi to boot from the hard disk. Not only no more pesky 'insert COMMAND.COM disk in drive B', but almost no need for floppies at all.

A large debt of gratitude to David Langford and Teb Webber for their APRICOT FILE Release 2.5 articles covering the elusive COMSPEC. While I have still failed really to get to grips with the nature of the environment (in spite of the tantalising tid-bits in the otherwise invaluable *MS-DOS Handbook* by Richard Allen King, published by Sybex and sold at the usual ludicrous £19.95), I discovered that arguments held in the environment remain there in perpetuity — or at least until you get bored with them and change them.

Thus, having keyed in the miraculous phrase ...

```
SET COMSPEC=A:\COMMAND.COM
```

... and having ensured that both COMMAND.COM and some form of AUTOEXEC.BAT reside in the root directory of drive A, you may sit back and enjoy the prospect of having to do nothing more than reach for the power switch to get started.

Steve Allen
MRC Dunn Nutrition Unit, Cambridge

COMSPEC revisited — no. 2

With reference to David Langford's attempts to hold COMMAND.COM in RAMdisk (APRICOT FILE Release 2.3), the last action of the MS-DOS/BIOS load operation is to load and enter COMMAND. This then

actions AUTOEXEC.BAT before passing control into your hands. See the problem?

In order to operate, the command environment must set up a PSP which has the usual pointer at 2C to the environment. But at the time of loading it did not know your SET commands, so these influence only *subsequent* program loads.

COMMAND is a very clever fellow who grew up in the days of small-memory machines; it is in two parts, one of which gets overwritten by any program you run. It is the non-resident part which has to be refreshed from disk and which you want to use from RAMdisk.

I don't have a PC, but when booting from drive B this works on my Xi:

```
SET COMSPEC=C:\COMMAND.COM
COPY B:COMMAND.COM C:
C:\COMMAND.COM
```

The diskette in B may be removed without causing a 'drive not ready' message or somesuch. Incidentally, the logical boot drive number is stored in 408H, and if you clobber the RAMdisk version of COMMAND.COM as I have done it looks to that drive.

Thinks: it's rather stupid to have a command program which saves memory by allowing part of itself to be overwritten only to be refreshed from another part of memory. Scope for a patch?

Dave Clifton
Signalglen Ltd, Croydon

Beeps in SuperCalc XQTs

I tried for ages to find an easy way to put a beep into a SuperCalc XQT file. Then ... eureka!

Using WordStar in non-document mode you type ...

/ S ^ P ESC , ^ P C ^ P C

This actually produces ...

/ S ^ [, ^ C ^ C

(*Something similar to this should work with any word processor that can save a file in ASCII format — Ed.*) This lines tries to save the current SuperCalc; but then you change your mind, and the Apricot ticks you off. Quite right too!

Martin Rogers
London E13

Write On

The Readers' Writes page is your chance to share your thoughts with other subscribers — we'll print any and all comments, queries, complaints, compliments, tips that we feel may be of general interest. Letters might be edited for grammar and length, but in general we print more or less exactly what we receive.

Send your letter to us via electronic mail (Telecom Gold 81:JET767) or by land mail to:

APRICOT FILE
TP Group
PO Box 509
London N1 1YL

Contributors in this issue

Dennis Jarrett is Editor of the newsletter. His magazine credits include being founder-editor of 16 BIT COMPUTING, OLIVETTI USER, COMMODORE USER, OFFICE AUTOMATION REPORT, PRACTICAL COMPUTING and WHICH COMPUTER? Books include THE IBM PC BOOK (not very thick), THE SIRIUS/VICTOR 9000 BOOK (very much thicker), THE ELECTRONIC OFFICE — A MANAGEMENT GUIDE (fairly thick), and THE GOOD COMPUTING GUIDE (*really* thick and very cheap too from DEALS FOR READERS).

Alan Craxford is an orthopædic surgeon in the North East. Weaned on a TRSty-80 expanded beyond anything Tandy would have recognised, he probably owns the only home-micro Xen in captivity ... Although he says he uses WordPerfect for manuscripts and Delta 4 for research purposes, these seem more at home dropping notes to the mum-in-law and keeping track of the family finances.

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).

David Langford is a full-time writer and computer addict, whose latest novel LEAKY ESTABLISHMENT is "by no means" about his years at AWRE Aldermaston. He is inordinately proud of winning one of the 1985 Hugo Awards, Science Fiction's 'Oscars'.

Paul Lavin is an American who succumbed to the wiles of an English woman and the siren song of the long British raspberry season over three years ago. He is a legal consultant and has recently renewed his love affair with computeroid machines. Unable to get beyond the third attack wave in *Space Invaders*, he has become conversant with the world of business software and the excruciating application of the Data Protection Act to the unsuspecting small business computer user.

Simon Potter is a business systems consultant with a speciality in word processors, file managers and spreadsheets. He says he'd like to like computers but can't find one that likes him enough to warrant that.

Brian Read was once a public health inspector but is now a freelance writer, mainly of books for children. He says he is "an enthusiastic but naïve" Apricot owner.

David St. John-Wallis is a sort of psychologist who runs an export marketing consultancy and writes *enormously* thick marketing books about the developing world. He's a chastened man since he first leapt to journalistic prominence in these pages; vituperation, vilification, abuse, rejection and guffaws have nearly broken his spirit. So he now runs a sort of computer software company. ◆

A Batch File Cookbook

Part Two — AUTOEXEC, Prompts, and Batch File Tricks

By Simon Potter

Once you've written a batch file, it can be used like any other MS-DOS command. Which means you can run it by typing its name (minus the .BAT suffix) at the command prompt: or you can call it from within another batch file.

There is one exception to this — AUTOEXEC.BAT. You *can* run this by entering its name, but it will also (and more usually) be executed *automatically* — hence the name.

When your computer is switched on, it goes into an automatic start-up routine which involves this lot:

- it checks itself out
- it automatically loads MS-DOS (assuming it can find the operating system files somewhere). Actually DOS consists of two programs, MSDOS.SYS and IO.SYS, which are 'hidden' — they won't show up in a normally DIRectory listing — to discourage you from tampering with them
- it loads and runs the third part of MS-DOS, a program called COMMAND.COM. This basically tells the computer to look for, accept and try to execute any commands coming its way; it includes all the *internal* commands, things like DIR and TYPE which don't appear in a DIRectory listing as separate files (unlike *external* commands like CHKDSK and FORMAT)
- it looks for a program called CONFIG.SYS, which is executed if it's present — we'll cover this later in the *Inside MS-DOS* series, but you can use CONFIG to change some of the default 'configuration' settings (what device drivers to use, port settings, and the like)
- finally, it looks for a batch file called AUTOEXEC.BAT and will run it if it's there. This is where we really come in.

The automatic start-up

An AUTOEXEC.BAT file can contain any commands you want. This means it's ideal for setting up your system precisely as you'd like it to be. To show you just what that might involve, here's the AUTOEXEC that I use; it illustrates many of the commands you might consider including.

```
ECHO OFF
CLS
VERIFY ON
PATH    A:\;A:\DOS;A:\DOS\UTILS;A:\PROGRAMS;
        A:\PROGRAMS\SC3;A:\PROGRAMS\WORDPROC
DPATH30/P
PROMPT  It's $e[1m$t$h$h$h$h$h$e[0m on
        $e[1m$d$e[0m and you're on drive
        $e[1m$p$e[0m $_Enter a command:
MENU
```

Here the PATH command is split across two lines for clarity, but *don't enter it that way* — after the command name there should be one space before the parameters, and thereafter there should be *no* spaces and *no* Returns until you reach the end of the command line.

This is a batch file like any other, so you can use any of the methods outlined last issue to write it.

Ok, so what does it do? The commands inside this AUTOEXEC.BAT are executed in sequence, so let's take them that way:

■■■ ECHO OFF

MS-DOS normally prints on the screen any command it's about to execute; including the line ECHO OFF in your batch file will suppress this effect, so that only the information and instructions you want to be displayed will actually appear. (The ECHO OFF command itself will appear momentarily, because the 'echo' still applies until MS-DOS executes the command.)

■■■ CLS

Another bit of tidying up: this one clears the screen before things start happening. As a matter of course, all my batch files start with these two lines.

■■■ VERIFY ON

This is another good habit. This command will make MS-DOS double-check every time it stores something on disk, by comparing what's been saved with the original. Actually, it doesn't quite do that — it's not that clever. But it does provide *some* degree of verification, and it's better than nothing. Because MS-DOS is usually pretty accurate at saving to disk, and because the verification slows things down a bit, the default start-up condition is VERIFY OFF (no automatic verification). But I like to play safe, so I switch it on right from the start.

■■■ PATH

Ordinarily MS-DOS will look on the default drive for commands and programs you ask it to run. If you include a drivename and/or subdirectory

prefix, it will go and look in the specified disk or directory; but it can become tedious having to use those in front of each and every command, it's easy to forget where a particular program is if you have a lot of subdirectories, and things can get very complicated if the effect of your route specification leaves the system with a default subdirectory that you don't necessarily want.

PATH is an internal command which gets around all that. In effect, it allows you to specify a series of default drives and subdirectories; when MS-DOS goes hunting for the command or the file you've requested, it will go down each route specified in the PATH command in turn.

On my Xi, the programs I want to use most frequently will be in one of six places: the root directory (A:\), or one of five subdirectories — A:\DOS, A:\DOS\UTILS, A:\PROGRAMS, A:\PROGRAMS\SC3 or A:\PROGRAMS\WORDPROC. The PATH command here means that MS-DOS will first look in the root, then try each of the subdirectories in turn — and I don't have to preface my commands with a string of route-map references.

Anyhow, it's worth explaining why I do this PATH-setting, since it illustrates the point that subdirectories can simplify the organisation of a hard disk. In practice I keep the root directory fairly empty — it just contains MS-DOS itself and COMMAND.COM, plus a load of subdirectory references. That makes things neater, and it's easier to see what else is on the disk (I *hate* big DIR listings on the screen) because most of my files can then be segregated logically into different subdirectories.

So MS-DOS would first look into the root directory. About the only thing it would find there is COMMAND.COM, so then it would try the next PATH reference. One of the subdirectories — \DOS — contains everything else that was on the MS-DOS system disks I received with the computer, and some of the utilities (FORMAT, DCOPY and MV) I've placed in a sub-subdirectory called \DOS\UTILS. This also has some of the more useful utility programs I've bought or acquired from the public domain. If I'm trying to run a DOS command or a utility, these two PATH references will almost certainly direct MS-DOS to them.

If I'm trying to run a program, it's likely to be somewhere in my PROGRAMS subdirectory. And since there are two programs I use frequently, I have a pair of sub-subdirectories within PROGRAMS — SC3 for SuperCalc 3, and WORDPROC for word processors.

The nett effect is that I don't have to use pathnames in front of a command: and even if I am currently working on drive A, the system will find whatever I want whenever it is requested ... provided I have included enough path-routes in the PATH command.

Note the syntax for PATH: each pathname is separated by a semicolon, and there are no spaces after the one that follows the command name itself. You can include the drive identifier, as I have, and obviously you can specifiy a mix of different drives for MS-DOS to search.

Even if you have only floppy disks and/or you don't use subidrectories, PATH can be put to work. For instance, I constantly forget to specify the drive when trying to load a program. But you can simplify things by including this command in your AUTOEXEC.BAT:

```
PATH A:\;B:\
```

This will persuade MS-DOS to search *both* drives whenever you ask for a program, without the need to specify the correct drive as part of the file name.

Like most of the commands I've been talking about in this series, PATH can be used on its own at the system prompt to set or change the path routes (PATH on its own without any route specifiers will show you what paths are currently set; PATH followed by a single semicolon and nothing else will kill any previous settings and tell MS-DOS to look only in the root directory of the default drive). But clearly it's better to include it in an AUTOEXEC.BAT file: that way it's always set on start-up.

The routes specified in PATH will apply until the next time MS-DOS comes across a PATH command.

Be careful about this, though — MS-DOS records the PATHs you currently have set in what's called 'environment space', and there isn't much of that. So if you set very long PATHs, you'll run out of environment space.

■■■ DPATH30/P

The drawback is that PATH works only for 'executable' files, those with a .EXE, .COM or .BAT extension. If you want a data file, PATH won't guide MS-DOS to it. This is particularly irritating for programs like WordStar and SuperCalc which include on-screen Help (usually kept apart from the main program in a separate text file) and 'overlays' (these files, which typically have a .OVL suffix, contain parts of the program which are called up only as required).

There are a couple of ways to tell DOS to search for data files in different directories and/or on different drives, and they both involve utilities which aren't part of MS-DOS. You can buy a proprietary program, something like Caxton's

SMARTPATH: or you can use the public domain utility DPATH30.COM, which does exactly the same thing. As you can see, it's DPATH which I utilise (it's cheaper — included on the £15 DEALS FOR READERS disk no AP018).

DPATH just duplicates the effects of PATH but for data files. The /P switch tells DPATH to copy the specification of a preceding PATH command. So in this format it will guarantee that MS-DOS finds all the .OVL and Help files a requested program will need.

■■■ PROMPT

This line looks a real mess, doesn't it? The PROMPT command lets you specify what the MS-DOS prompt should look like. And since I loathe the hieroglyphic 'A>' or whatever that MS-DOS comes with, any AUTOEXEC.BAT I write will include a command that puts up a more informative and (hopefully) more friendly invitation to enter something.

The syntax for the command is simple:

PROMPT <text>

All the text specified is used by MS-DOS as the new prompt. (If no text at all is specified, DOS reverts to the standard prompt — which is how you reset it after using the PROMPT command to change it).

As you might gather from the string of text that I have in my command, PROMPT is practically a mini-programming language on its own. The table shows just what you can include in the 'text' for a new prompt. Since PROMPT can be used outside a batch file — at the prompt, in fact — you might like to experiment with a few combinations; remember, you can always get back to the standard prompt by typing 'PROMPT' on its own.

And what can you include in PROMPT text? Well, it can be any Apricot-specific ccontrol codes (watch for a David Langford article on that subject soon): or you can utilise ASCII codes, which is what my PROMPT uses (because that way I can quite easily transfer the whole AUTOEXEC.BAT set-up on to other computers).

- **Keyboard characters**: You can also have actual words in the prompt string. Try this, for example:

```
PROMPT Enter a command:
```

  In fact, nearly anything you can type on the keyboard can be put into the string — including spaces, and it would be neater if you pressed the space bar a couple of times after that final colon and before Return (otherwise there would be no gap between the message and the response).

- **Special characters**: There are a number of special characters that have to be preceded by a dollar sign if they're to be used in the prompt text, and those following are all ANSI codes:

$g	the greater-than arrow (>). If you actually *like* the pointed style, you'll need this once you've replaced the original prompt
$l	the less-than arrow (<)
$b	the 'bar' symbol (|)
$q	the equals sign (=)
$$	the dollar-sign character itself

- **Automatic insertions**: Further 'dollar-sign' characters will automatically insert information held by MS-DOS into the prompt text:

$t	current time
$d	current date
$n	the default drive letter
$p	the current drive and the current directory on the default drive
$v	the MS-DOS version number

  Here's an example that represents a mild modification of the standard prompt. It displays the current disk drive, the default directory and the greater than symbol:

```
PROMPT $p $g
```

  For example, the resulting prompt might be ...

```
A:\DOS >
```

  Another example:

```
PROMPT TIME $q $t
```

  This displays the current time in the format `TIME = hh:mm:ss.ff`. Something like this could be useful for checking how long a program takes to run by comparing the difference between the times of the 'before' and 'after' DOS prompts.

  This one is more useful, to my mind. It mixes some text and specials to produce a prompt containing the date, time and an indication of the current drive and subdirectory:

```
PROMPT  Time - $t Date - $d Default directory -
        $p Enter a command:
```

  When it next appears, the prompt will be something like this:

```
Time - 11:20:31.13 Date - Mon 29-09-1986 Default
directory - A:\ Enter a command:
```

- **Formatting effects**: Two more 'dollar-sign' characters produce various effects:

$h	backspace and erasure of the preceding character
$_	*(dollar followed by underscore)* new line: the cursor is moved to

the start of the next line (for multi-line prompts)

The example above could be modified a bit:

```
PROMPT Time: $t$_Date: $d$_Default directory:
       $p$_Enter a command:
```

The prompt will now appear as ...

```
Time - 11:20:31.13
Date - Mon 29-09-1986
Default directory - A:\
Enter a command:
```

- **Escape characters**: Most of the admissable ANSI Escape sequences can also be used in a prompt. They are all preceded by $e, and you'll find that the more useful ones are for putting emphasis around displayed characters.

So what's happening in my PROMPT command?

```
PROMPT  It's $e[1m$t$h$h$h$h$h$e[0m on
        $e[1m$d$e[0m and you're on drive
        $e[1m$p$e[0m $_Enter a command:
```

Well, a prompt reading ...

```
PROMPT It's $t$h$h$h$h$h$h
```

... would put on to the screen the time ($t) followed by six $h backspace characters. They remove the last six characters of the time as displayed by MS-DOS, which just clutter things up — you don't *really* need to know seconds and hundredths of a second, do you?

I have bounded the time display with Escape-code characters which switch on emboldening — with $e[1m — and then switch off again, with $e[0m. It's not exactly necessary, but it looks good.

The prompt then tells you the date ($d) and it confirms the current drive and subdirectory ($p), again with emboldening on both. Finally it starts a new line ($_) and invites you to "Enter a command:".

■■■ MENU

One genuinely useful application for AUTOEXEC files is to put a menu of options on to the display. There are a number of ways to do this, but I think this approach is simplest and safest.

This command runs a short batch file I've written called MENU.BAT, which looks like this:

```
ECHO OFF
CLS
TYPE MENU.TXT
```

In other words, it kicks off with my two habitual screen-clearing commands and then TYPEs on to the screen a text file called MENU.TXT. And that looks something like this:

```
---------------------------
        Master Menu
---------------------------
WP ..................... 1
CARDBOX ................ 2
SUPERCALC 3 ............ 3
COMMUNICATIONS ......... 4
```

(This is created easily enough with a word processor. Make it 24 lines and you'll fill the screen.) So the options are displayed; and you'll need to have made batch files for each item on it, with their names corresponding to the selection. For instance, 1.BAT will load and run a word processor, and it contains everything I need for that.

And once it's there on the disk, of course, 1.BAT can be used simply from the prompt to do everything you need to run the word processor.

You need similar load-a-program batch files for everything in the menu list. My final option, 'COMMUNICATIONS', runs a file called 4.BAT which actually puts *another* menu on the screen with options for some file transfer and comms programs.

You don't particularly need to use numbers in the menu text and as the batch-file names, of course. You might prefer to use individual letters or meaningful two-character combinations.

Interactive batch files

There's an alternative way to display a menu of choices and run a selection. Of course, it would be handy to be able to write a little batch file that allowed the user to specify precisely what he or she wanted to do, and then took the appropriate action using the keyboard responses.

Well, there are a couple of ways to interrogate the user from inside the batch file. One is very tricky if you have to do it yourself: it needs a program that can set the ERRORLEVEL flag in memory.

Which is precisely what the public domain utility ASK.COM does: this you'll find on DEALS FOR READERS disk AP001. ASK echoes the remainder of its command line to the screen as a prompt, then waits for (even insists on) a single 'Y' or 'N' keystroke (or 'y' or 'n') in response. Subsequently your batch file can check which it was it by an IF ERRORLEVEL statement.

The other way of interrogating the user is a bodge, but it's a rather neat one.

When MS-DOS executes a batch file, you might have thought that it reads the whole batch file and then executes it — surely it would be very slow to have to re-read the file each time MS-DOS wants to

get the next line? And besides, there's the danger that the user will have taken out the disk inbetween two reads of the file ...

But yes, that's the way Microsoft wrote MS-DOS. It reads the batch file one line at a time; and if something changes the file between reads, MS-DOS will be blithely unaware of it.

We can use that fact. Take a menu-choice application. All we have to do is create a batch file called say MENU.BAT which looks like this:

```
MSBASIC MENUPROG
REM  This line will be replaced by a command
     to be executed
MENU
```

You'll need a small Basic program called MENUPROG which displays a menu of options to the user, detects which of the choices the user wants to run, and then creates a *new* file coincidentally called MENU.BAT. This one would be just like the one above but with the REM replaced by an MS-DOS command to be executed.

When MENU.BAT is invoked, it first loads and runs the MENUPROG.BAS program. When that program is finished, MS-DOS goes on to execute the second line of the batch file — or at least that's what it thinks it's doing. In fact the whole of MENU.BAT has been replaced by the new MENU.BAT, and by now line two is the command that the user has chosen. When that command is done, MS-DOS runs MENU again; and the cycle can continue for ever.

The way to terminate it, by the way, is to make the second line read 'EXIT'.

Using batch files like subroutines

There is a more orthodox way of achieving the same end, and it's even cleverer: it lets you treat batch files as subroutines.

You can pass arguments or parameters to batch files using the percent-sign numbers. But if you try to call one batch file from another, the caller will pass control to the called batch file. So ONE.BAT can include the command 'BATTWO' that runs another batch file called BATTWO.BAT; but if BATTWO includes the command 'ONE' to get back to the first one, the ONE.BAT file will be re-run *from the beginning* — and not from the point at which it passed control to BATTWO.

But other batch files *can* be invoked from inside the original batch file with control returning to the next line in sequence. The nested batch files are called in the normal manner but preceded by the COMMAND/C — for example, COMMAND/C MENU. It works rather like this:

```
REM Invoke first batch file
REM Returned from first file; now do a second
COMMAND/C BATCH2
REM Returned from second file; now do a third
COMMAND/C BATCH3
REM All done — return to DOS prompt
```

Here's a practical example, a file called CONVERT.BAT:

```
CD\%1
COPY A:*.* D:
CURRTRAN
COPY D:*.* A:
CD\
```

This is a daily foreign exchange currency-converter. When you type 'CONVERT YEN', for instance, the effect will be to copy all files from the subdirectory A:\YEN into the RAMdisk set up as drive D. Then the batch file runs CURRTRAN, a short Sterling exchange converter. Finally everything is copied back from the RAMdisk on to A:\JAP.

But suppose you have a lot of currencies to convert. What you need then is a 'master' batch file called CONVERT which looks like this:

```
CURRTRAN DOLLAR
CURRTRAN FRANC
CURRTRAN MARK
CURRTRAN YEN
```

As it stands, running CONVERT will pass control to CURRTRAN to work initially on dollars: but because CURRTRAN.BAT exits to MS-DOS, CURRTRAN FRANC will never get done.

But you could change CONVERT.BAT as follows:

```
COMMAND/C CURRTRAN DOLLAR
COMMAND/C CURRTRAN FRANC
COMMAND/C CURRTRAN MARK
COMMAND/C CURRTRAN YEN
```

You'll also need to add a single line reading 'EXIT' as the last thing in CURRTRAN. Now when CURRTRAN is finished doing dollars, control is passed back to CONVERT — which then calls the next CURRTRAN.

It seems that batch files can be 'nested' like this as deeply as desired. Each nesting level takes up a chunk of memory, but this is recovered when the nested batch file is completed.

You'll find that you have to use ECHO OFF in each batch file if you want it off; MS-DOS turns the echo back on again every time a batch file starts. ◆

Doodles by David

Tips and Tricks

By David St.John Wallis

(Being a truncated account of a Gentleman's Excursion to a certain island not a couple of hundred yards from Malaya.)

Before arrival at Changi (yes, the very same place as the PoW camp of yore) it is important to remember four things:

- Flush away all your coke, crack and heroines before you land
- Remove your shoes at every conceivable opportunity
- Practice your chopsticks
- Pray do not chuck fagends out of windows.

Failure to recall Rule 1 can produce a permanent dose of death; the penalty for non-observance of Rule 2 is much worse, complete and utter social ostracism and no jam for tea. The same applies to Rule 3. For breach of Rule 4 see breach of Rule 1.

The next thing to avoid is the Duty Free Shop. Ian Craven (of whom more later) has so much Scotch he has to force it on guests (for breakfast already!) and the electronics are cheaper downtown.

Uncle Lee Kuan Yu still runs the place where someone once said "if everyone contemplates the infinite instead of fixing the drains, most of us will die of cholera". Or perhaps that was in India. (Yes, it probably was.) Anyway, Lee doesn't wear Argyle socks and reminds me of he who built Hampstead Garden Suburb, or Bournville or Oslo on a wet Sunday afternoon. He likes a spot of the feudal subservience; in fact he likes lots of it. But in return he dishes out great chopsticks (if you're a buddy), not much AIDS, and an environment like Torremolinos but with Four Treasures Rice on the menu.

Relishing this paternalistic scene are two fine men, one from Yorkshire and t'other from California — respectively, friendly, svelte and rugged Ian Craven, mine host of oilwell fame (and longtime APRICOT FILE subscriber): and bearded, bespectacled young Dan Nelson, who has definitely given up shaving his legs. And what do these fine fellows have in common? Nothing less than Apricots. Hoy!

Bargains

Did they introduce me to the opium dens of the Orient, the Ring of Love, the Death of a Thousand Cuts? No, 'twas the Funan Centre instead. Like Sainsburys but with fewer veg counters, a toyshop for grown-ups that sports emporia of all types (although its cheese deli is sadly bereft) including a whole floor full of computer shops. Symphony for £10.83? WordPerfect for £8.50? True. And the hardware prices make you want to burst into tears:

floppy disk drive	£52.30
104-key Super De Luxe keyboard	£43.87
parallel/serial card	£50.61
Tandon 20MB drive	US$177.90
printer cable	£2.02.

How many times have you forked out £25 for a cable? Oh vey ... I won't tell you what an AT baby motherboard costs because *for certain* you'd get locked up in the rubber room. Instead, we at OmrC have laid down a computer spec and are now awaiting prices. Feast them on this:

- full IBM-compatibility
- 80386 processor
- switchable clock speed — 12MHz and up
- 80387 maths co-processor
- at least four spare slots
- 2MB memory, expandable to 4MB at least
- 80MB hard disk with 25ns access
- tape streamer
- two double-sided IBM- or Apricot-sized floppy drives
- 104-key keyboard
- high-resolution colour monitor with EGA
- MS-DOS 3.2 or 4 and a GWBasic
- Unix capability
- networking capability

The plan is to get this into the UK for as near to a thousand quid as dammit and sell it at half the price of the nearest competitor, thus making for ourselves *big* bucks. We could then do a Unix terminal for less than £230: Wang's cost £6,000 — *each*. The queue for forming a partnership with Svelte, Clean-Shaven and Awesome *(these appear to be nicknames — Ed)* can start in the Circle at the Royal Opera House straight away. Don't be late or you'll miss the Tizer.

Questionable taste

Did I see a note on DEALS FOR READERS disk AP008 which criticised our DisplaY utility? Shame on you, Mr Gann. AP008's LIST gets all of a bother when confronted with a SuperWriter file — or any word processor file, come to think of it.

Quicker? Well, a bit. More versatile? No! Any three fingered old hack from down Slough way can bash out a LIST.COM equivalent between nightmares — it takes an optician of genius to work out DisplaY. And our ScannerS disk, hype hype, doesn't begin with a 'file not found' message ... *(Point taken; AP008 will be corrected — Ed.)*

Friendly Telecom Gold

Should you lose your password on Telecom Gold, solution is at hand. Run this batch file:

```
IF EXIST ZAHEDA BORAX THEN DO %1 YOICKS,
%2 TANTIVY etc.
CALL 01 403 6777 ^Z
```

Of course this only works if you have our CALL.COM, an internal modem and a poor memory. (The unlikely Zaheda Borax was not dreamed up by F Scott Fitzgerald — she exists solely within British Telecom to deal with twits. Ms Borax is no twit and is to be commended highly.)

Less bucolic fanfares however for faceless Lisa and a Mr F of Apricot plc at 021-501 2284, whose views on getting on to Debenhams COMSHARE system within Gold were to use the Mercury Link protocols! *(We don't know Mr F, but she's one Lisa Humphries in Apricot Tech Support — Ed)* These people reminded me of the Irish junkie who wouldn't get AIDS from a dirty needle because he was wearing a condom. (Is nothing sacred? Not a lot, vicar). ◆

Sticky fingers

With this issue you should receive a sheet of peel-off stickers to correct the misprinted dates on the foot of every page in APRICOT FILE Release 2.6, the March issue. Apologies for the blunder.

Apricot expands

The share price took a bit of a dip when the City got wind of some nasties in the preliminary year-end figures for **Apricot plc** — seems profits might be lower than expected — but otherwise the company still looks as good an investment as we predicted (we said try a flutter two months ago when the shares were around 60p; they're now in the mid 80s, and should top 90p in another few weeks).

The latest corporate moves look interesting: Apricot is buying **Digital Microsystems**, the **Extel** subsidiary that sells (quite successfully) the **HiNet** local area network. DMS always looked slightly out of place in the Extel fold, and anyhow Extel is currently trimming its operations — it's just sold off **MGE Systems** too. The DMS people (maybe its products too) should complement Apricot's own ambitions to be an upmarket supplier of high-value systems; and apart from anything else, DMS also brings 8,000 users into the Apricot ambit.

Apricot is paying **£2 million** in cash for DMS (half now, half on 1 January 1988). DMS is currently profitable but not spectacularly so — the last accounts, for the year to March 1986, showed pretax profits of **£283,000** on sales of **£13.2 million**.

Laser by Apricot

The **PageMaker** desktop publishing system that Apricot has been trying to sell for a few months really requires a laser printer that can accept PostScript page formatting codes ... and Apricot's present **PCL** printer (a rebadged **Kyocera**) doesn't. Now Apricot has announced the **PS8**, a printer than *is* PostScript-compatible; it's another rebadging job, this time on the obvious candidate — the **Apple LaserWriter**. This is hardly a surprisingly choice, since the LaserWriter is the best-proven of a small group of PostScript printers; but it isn't exactly a bargain price. The printer alone costs **£5,645**, which means a full Xen-i DTP publishing system would come in at around **£9,000**. There are other, cheaper ways of setting up a desktop publishing system *without* PostScript ... and Apple's own PageMaker-plus-Mac parcel beats Apricot's price.

Business Phone Awards

British Telecom and **The Sunday Times** are jointly responsible for a new business competition (yet another one) called **Business Phone Awards 1987**. The aim is "to focus on companies who have improved business by using the telephone in the most creative and effective way"; examples include improved customer relations, increased sales or extra profitability from the use of electronic mail, data transfer, facsimile or video conferencing. The prize sounds a bit modest — **£1,000**, certificates and a plaque — but anyone can enter; you'll have to explain in no more than 500 words, how, why and with what result your company has used the phone within your business. Entry forms from **01-240 8751**. The closing date is **30 April 1987**.

Apricot replaces ICL

One of Apricot's current business strategies is to convert big dealers from other manufacturers — in which context it's interesting to observe electronics components distributor **Anglia Components** replacing a system of 30 ICL VDU terminals with a **£250,000** Xen-i network. The order includes 48 diskless workstations and six Xen-MF file servers, with installation starting in July; they'll be talking to a pair of ICL System 25 minis. The dealer involved, **Sure Computing**, is also an ICL Traderpoint dealer: it has long specialised in linking Apricots to ICLs via its own SIRUP package.

Gold on the road

Telecom Gold is touring a mini-exhibition over the next few months, with demonstrations of electronic mail, Telex and some database services. The roadshow stops for two days each in **Nottingham** (Sherwood Centre, 7 April): **Glasgow** (Scottish Exhibition Centre, 12 May): and **Newcastle** (Civic Centre, 20 May).

Atlantic Crossing

MicroLink, the lower-cost entry into Gold we review in this issue, is about to complete its hook-up with the giant American database services supplier **Mnematics**. This will allow US comms users to access MicroLink's electronic mail system and other services; last autumn MicroLink gave its UK users the chance to exchange messages with America and to access Mnematics' vast array of services (share movements from Dow Jones, a 24-hour-a-day global news service from AP, over 40 special-interest sections). According to MicroLink, response was said to be "so enthusiastic that Mnematics has been under intense pressure from American users to let them take a look at MicroLink's own extensive database". ◆

DFR Update

Roger has come up with a couple of new DEALS FOR READERS disks that will appear in the next Mail-Order Catalogue (due out next month).

■■■ APRICOT FILE RELEASE 1 [Order No AP020, price £15.00] A double-sided disk (our first) containing most of the listed programs described in Release 1 of APRICOT FILE — BATch files, spreadsheet templates, Basic programs, some tiny .COM files, and more. Plus useful utilities like FORMAT and DCOPY, and a fascinating graphics demo program from David Langford. All on a MS-DOS 3.1/BIOS 3.1 disk with the Victor Technologies COMMAND.COM; self-booting on Xi and PC.

■■■ THE COMMS DISK [Order No AP021, price £10.00] A bargain at only a tenner — includes the excellent KERMIT file transfer package, version 2.28, together with a helping of comms utility programs. Full documentation on disk.