



# Recording session

The Windows Recorder facility has nothing to do with video or sound; rather, for repetitive tasks, its time-saving abilities could be invaluable. Panicos Georghiades and Gabriel Jacobs explain.

**T**he computer is the ultimate programmable automated machine, and its keyboard and mouse are multi-functional. The problem is that we can end up with having to press innumerable combinations of these buttons whereas just one could do the job of many. In other words, we could do with a single piece of program code that manipulates other programs: a computer using a computer.

Such programs do exist and many are free, like the macro recording facilities in word processors. Windows has its own under-used Recorder accessory. Despite the camcorder icon for this accessory, which to many users may be misleading, this program has nothing to do with recording video or sound (there's a separate Sound Recorder accessory).

The Recorder is not a full-blown facility as found in Excel or Word for Windows: it lacks a programming language. In other words, you can't set up a command script. It merely records your moves and you cannot subsequently edit the result, so if you make a mistake you have no option but to record again. What's more, the Recorder doesn't accept any input at run time and lacks decision-making capabilities.

The good news is that your Recorder macros can span a number of Windows applications simultaneously, so you can copy data from one to another. And, a macro recorded in one application can work in another, provided its moves make sense. So, if you find you're constantly involved in repetitive tasks, the Recorder can be a time-saving tool, and despite the restrictions we've already mentioned, the uses to which it can be put are legion.

Recorder saves its macros in files with

an REC extension. You can keep many macros in a single REC file, and it is often useful to do this. For instance, you can have a group of macros called "printers", each one installing a specific printer as the default Windows version. You could have another file of macros called

"letters", where you keep personal details and standard phrases you use in correspondence such as "Yours sincerely". These can then be used in any Windows text application: WordPerfect, Write, Notepad. You're not restricted to the macros you may have written in your most-used word processor.

There's no need to present a full-blown tutorial on the Recorder here because the manual is good enough. Instead, we've provided some handy tips and examples.

## The automated letter-writing macro

If you write letters, which are made up of standard phrases, to different people you can automate the process by having the Windows Recorder type in the appropriate one for you. Just select the ones you want:

1. Double-click on the camcorder icon and from the Macro menu select Record.
2. In the Record Macro dialog box, type in a name for your macro (Address, say) and a shortcut key, perhaps A. (The Ctrl check box will be crossed, so your shortcut key is in fact CTRL A — see the Tips panel for the reason why you should stick to CTRL.)
3. At the list box named Record Mouse,



select Ignore Mouse.

4. At the Playback To list box, select Any Application.
5. If you wish, type in a description and click on the Start button. The Recorder window will minimise and start flashing.
6. Type in your Address with carriage returns (CRs):
 

```
The Man with No Name <CR>
      Clint Eastwood Estate <CR>
      A Town called Hell <CR>
      Wild West<CR>
```

7. Click on the minimised Recorder icon and on the OK button to save the macro.
8. Select Record again and repeat the above procedure for any other standard phrases you use.
9. Finally, choose Save As and save all the macros in a single file (PHRASES, say).

To use these, run Recorder and load PHRASES.REC. From your word or text processor, type the shortcut key for the phrase you require, or double-click on the name of the appropriate macro.

## A Screensaver On macro

There are also cases where you would want a single macro to be assigned to an icon so

that it will execute when you double-click on it: setting the screensavers on and off, say.

If your machine is used by different people with their own preferences about how Windows looks, you can expand this macro to change sets of Control Panel settings (wallpaper, screensavers, colours and so on), create a macro for each user and store them all in the same file, which can be run from the Startup group. All you do is select which user is on.

1. Double-click the camcorder icon and from the Macro menu select Record.
2. The Record Macro dialog box appears. Type in a name for your macro, say Screen Saver On, and a shortcut key, say 1. (You'll notice that the Ctrl check box is crossed, so your shortcut key is CTRL 1).
3. At the Record Mouse list box, select Ignore Mouse. Type in a description, and click the Start button. The Recorder window will again minimise and start flashing.
4. Press: ALT F, then R. Type in CONTROL.EXE and press <CR>. Now press: ALT S / D <the Tab key — 3 times>, <Down/Up arrow to the select the screensaver scheme you want>, <the Tab key> 1 <CR> ALT + spacebar C.
5. Click on the minimised Recorder icon and the OK button to save the macro.

Select Record again and repeat the above procedure for Screensaver Off — you select None as the screensaver scheme.

6. Choose Save As and save all the macros in a single file (SCREEN, say).

To make these macros run automatically, see the procedure outlined in the main text (above) and replace MYMACRO.REC with SCREEN.REC, and the shortcut key with CTRL 1, or anything else you want to use. To give a macro an icon so that it can be run with a double mouse-click, select New from the File menu of the Program Manager, click on Program Item and at the text box reading Command line, insert:

```
RECORDER.EXE MYMACRO.REC
where MYMACRO.REC is the file containing your macro(s). This will load the macro file, but won't play it. To play it automatically, your command line should read:
RECORDER.EXE -h ShortCutKey
MYMACRO.REC
```

Here, to start the macro, you have to use the shortcut key pre-defined in your file, and the following conventions must be followed: ALT is represented by % / CTRL by ^ / SHIFT by +. So the command line for a macro starting with the shortcut key-

## Tips for macro recording

- There's no need to assign a name *and* a shortcut key: either is adequate, but you must define a shortcut key if you want to use one.
- Although you're allowed to use ALT as part of your shortcut key combination, don't. You're almost bound to run into conflict problems because Windows and Windows applications use it.
- If you're preparing a macro to demonstrate a piece of software or some method, remember to select Recorded Speed as the playback speed instead of the default Fast option. Note that there's also a Continuous Loop option available which is useful for continuously running presentations.
- Practice the moves first, and write them down before recording.
- As far as possible, stick to keystroke combinations only instead of mouse movements and clicks: they present problems because the screen positions are also recorded, and opting for mouse co-ordinates relative to the screen rather than the window doesn't necessarily help. The only time you will need to use the mouse is if you're copying data or drawing graphics.
- Macros are transferable from one computer to another but you'll run into trouble if the two machines use different graphics resolutions or keyboard drivers.

combination CTRL F2, and stored in file MYMACRO.REC will be:

```
RECORDER.EXE -h ^F2 MYMACRO.REC
```

Note that the above line implies that MYMACRO.REC is stored in your Windows directory; if not, you have to specify the path. Therefore, if MYMACRO.REC is stored in a directory called MACROS on drive C, the above line would read:

```
RECORDER.EXE -h ^F2 C:\MACROS
\MYMACRO.REC
```

The default icon for macros is the camcorder, but you can change that. There are lots of macros you can design to do many things. Windows Write, for instance, can be enhanced with a macro to be used for automating formatting. You can create macros which combine a set of formatting features like font size, style or indents to create a selection of styles for headings and paragraphs, so that a single mouse-click does the job of five or six dialog boxes.

■ *We'd be glad to hear from you if you've thought of a really useful macro.*

## PCW Contacts

If you have any queries or Win 3.1-related topics to discuss, contact **Panicos Georghiades** and **Gabriel Jacobs** at [win3@pcw.co.uk](mailto:win3@pcw.co.uk).



# Lost and font

Help! I've lost my fonts. Deleting fonts is a dangerous business — Panicos Georghiades and Gabriel Jacobs tell you what you need to restore the status quo. Plus, a tip on Cardfile conversion.

**H**aving been carried away with your article about fonts in PCW July, I removed all the fonts except those I use. Big mistake! I overlooked those that Windows holds for Microsoft Works and Access, as well as for its own use. Can you tell me what basic fonts should be left in Windows\System?

Ian Shutes

[ianshutes@enterprise.net](mailto:ianshutes@enterprise.net)

We list here the fonts supplied with Windows 3.1. They're used for supporting the system and Windows applications, for DOS applications running in Windows and data copied to the Clipboard from these applications. As for Access and Works, specific templates may use specific TrueType fonts supplied with these packages as extras. The system font files for various screen resolutions are:

8514SYS.FON  
EGASYS.FON  
VGASYS.FON

OEM (Original Equipment Manufacturer) font files, for various screen resolutions, used for OEM text in the Clipboard Viewer and as a character set for certain Windows applications, are:

8514OEM.FON  
EGAOEM.FON  
EAOEM.FON  
VGAOEM.FON

In addition, some variants of raster screen fonts come with Windows, used for printing text and graphics as bitmaps or raster lines. The variants, each for a different screen resolution, have one of the letters A to F appended to the filename of the font. Included with Windows 3.1 are B (EGA display), E (VGA display) and F (8514 display). The fonts are:



COURx.FON  
SSERIFx.FON  
SERIFx.FON  
SMALLx.FON

where the x is a letter A to E. For instance, SSERIFE.FON is the VGA variant of Microsoft Sans Serif. Windows also comes with three vector (fully scalable) font files:

ROMAN.FON  
SCRIPT.FON  
MODERN.FON

Most important of all, five TrueType fonts are supplied with Windows (three of them as families). Each font has (not shown here) a file with a .FOT extension and a file with a .TTF extension. Each filename for Arial, Courier and Times New Roman, apart from the regular font, is followed by BD for the Bold version, I for the Italic version, and BI for the Bold Italic version. For example, the regular Arial filenames are ARIAL.FOT and ARIAL.TTF. Arial Bold Italic requires ARIALBI.FOT and ARIALBI.TTF.

The supplied TrueType font files are ARIAL (Arial), COUR (Courier), TIMES (Times New Roman), SYMBOL (Symbol)

**Fig 1** Be careful not to delete fonts required by system and Windows applications

and WINGDING (Wingding). Also to be added are certain fonts used for displaying non-Windows applications in a window:

APP850.FON DOSAPP.FON  
CGA40850.FON CGA40WOA.FON  
CGA80850.FON CGA80WOA.FON  
EGA40850.FON EGA40WOA.FON  
EGA80850.FON EGA80WOA.FON  
HERC850.FON HERCWOA.FON  
VGA850.FON VGA860.FON  
VGA861.FON VGA863.FON  
VGA865.FON

Since you have deleted many of the supplied fonts and we don't know anything about your requirements, it would probably be best to re-install all the standard Windows fonts we've mentioned.

## MPEG empathy

*"How can I tell if I have MPEG capability? I'm sure I do, but I don't think I have the software and/or drivers to view the files."*

Andy Davis

[alchemist@emarkt.com](mailto:alchemist@emarkt.com)

MPEG playback capability, which enables you to view full-screen full-motion video files including Video CDs (commercial movies and pop videos) comes in three flavours:

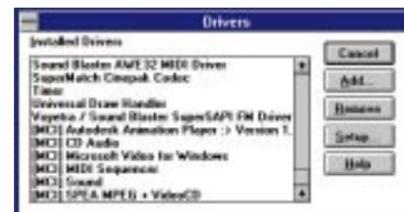
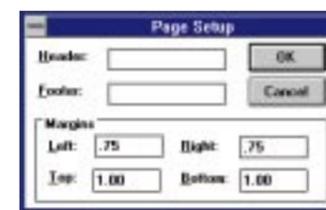
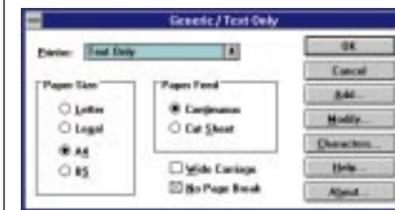
1. Software-only utilities.
2. A chip on an S-VGA graphics card.
3. A separate MPEG card, sometimes attached to the graphics card with a cable, or as a daughterboard.

If you do have the drivers installed you'll see the relevant lines in the Drivers section of the Control Panel. MPEG is installed as an MCI (Media Control Interface) device, like sound cards and CD-audio, MIDI, animation

## Cardfile conversion

One use of the Print to File facility is to convert certain non-ASCII file formats to ASCII for importing into other applications; an example being Windows Cardfile files. A number of utilities are available in the public domain for converting Cardfile files to ASCII, but the job can be done easily without them:

1. Install the Generic/Text Only printer driver and configure it to Print to File. Do this from the Printers icon in the Control Panel.
2. Start Cardfile and load the file you want to convert. Select Print Setup from the File menu, and in the dialog box select Specific Printer, then the Generic/Text Only driver. Click on the Options button, and select No Page Break.
3. Go to the File menu, select Page Setup and clear the Header and Footer boxes. Close dialog boxes and select Print All from the File menu. Enter the path and filename with, say, a .TXT extension.
4. You can now load this text file into a word processor, although you may find that you have to do some cleaning up, such as getting rid of blank lines.



**Fig 2** Checking for MPEG drivers

and other multimedia elements (Fig 2).

If the drivers aren't installed, have a look on your hard disk for any directories containing drivers and documentation about the card. The software may be on the hard disk, even though it's not installed. Failing that, open your PC and have a look at the hardware. Check your graphics card and any card next to it: every adapter card has a label printed on its PCB. Also, have a look at the names of the chips on the cards: many MPEG cards use a C-Cube chip. There are only about ten makes of MPEG card sold in the UK, so you should be able to identify whether you have one or not.

## Changing names

*"In May's PCW, in the Hands On section, Tim Nott wrote about how to change the username and company name of a PC. What is the Win 3.1 version of this solution?"*

[globalte@users.AfricaOnline.Co.Ke](mailto:globalte@users.AfricaOnline.Co.Ke)

When Windows is first installed, you're asked for your name and company. This data is stored in the file USER.EXE (Windows\System directory) in Win 3.1, 3.11 and Windows for Workgroups 3.1, but

in SERIALNO.INI (Windows directory) in Workgroups 3.11. The latter is an editable file, so if you have Windows for Workgroups 3.11, use Notepad or some other text editor to put in the name(s) you want, and re-start Windows. Simple!

Not so simple with the other versions mentioned above, though. But there is an undocumented and unsupported method (with a warning from Microsoft that it doesn't encourage its use). So if you're using Windows 3.1, 3.11, or Windows for Workgroups 3.1, here's the answer, but on your own head be it if you decide to use it.

1. Choose Run in the File menu of the Program Manager and enter SETUP /F as the command line, then OK.
2. Enter the new name and company name and click Continue. Then confirm.
3. The Setup Options screen will be displayed: again click Continue. Same with the Install Components screen, and if the Swap File screen appears, do the same.
4. You'll be asked to insert a Windows disk in drive A:. Click on the Exit Setup button and confirm the exit. Exit Windows, and when you re-start, the new name and company name should be displayed. We have tried this on some machines with no problem, but we take no responsibility.

## PCW Contact

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# Hands off my PC!

Are pesky people doing things to your desktop? Panicos Georghiades and Gabriel Jacobs unlock the secrets of security using progman.ini, and release a secure screensaver tip, too.

**T**his month, among the letters we have received, we return to the perennial cry of "Who's been messing with my machine?"

## Keeping it in the family

**Q.** "I need some help – someone in my family keeps mucking up my desktop. At the moment I have got my computer asking for the first letter of my first name, then copying the \*.GRP files and the \*.INI files from the users\glenn directory to the Windows directory. Is there an easy way to stop people doing this?"

Glenn Moseley  
moseleyg@usa.net

**A.** Someone in your family has created directories which hold Windows configurations for individual users and which are initiated before you start Windows. Provided these are updated when you exit Windows and that your machine doesn't suffer from crashes, there's no harm done. And, of course, this does solve the problem of different users using the same machine and having different preferences settings.

If you don't want others to use your machine, use your hardware key, if you have one, to lock it up. We suggest a password method in the screensavers section later on in this column, but if your mystery family member is clever enough to have thought of the method you've described above, only a physical lock may stop the perpetrator.

## Getting the boot

**Q.** "Having recently decided to use a multiple boot configuration I noticed, in your March column, an item about installing Windows 3.1 and Windows 95 on the same machine and it would automatically start

into Windows 95. I run most programs through Windows 3.1; is there any way to boot into DOS/Windows 3.1?"

Ian McDougall-Ryan  
balls@mail.zynet.co.uk

**A.** You need to edit the hidden and read-only system file MSDOS.SYS, found in the root directory of your boot drive, and add the line

```
BootWin=0
```

in the [Options] section. After you've done that, your machine will boot into MSDOS by default instead of into Windows 95. Pressing F4 just before the "Starting MS-DOS" message at bootup will start Windows 95. Please use a text editor (such as Notepad) to edit MSDOS.SYS. Be very careful and remember to revert its attributes back to hidden and read-only after you've edited it. In addition, do not delete all those unnecessary-looking lines full of "x"s at the end of the file: they are needed.

## Wild filed

**Q.** "In your Windows 3.1 column in the June issue of PCW, you mentioned cutting and pasting the filename in File Manager's Rename dialog box. As I am sure you know, you can also use wildcards. In the To: box you can enter \*.bak, for instance, to change just the extension of the file in the From: box. In fact, you can rename multiple files in this way, and you do not need to select them first.

For example, in the From: box, type in \chk\*. \* and in the To: box enter \abc\*. \* (should you, for some reason, want to change the first three characters of Checkdisk's multiple files in the root directory!)."

Steve Rainey  
UnisoftComputers@compuserve.com

## House-train a screensaver

Screensavers, originally designed to save our monitors from burning out, are nowadays used just as much for adding user individuality to machines as for preventing others from accessing machines when you are not around. But a screensaver, however cute and harmless it may appear, is yet another program running in the background along with your main applications, doing its bit to slow your machine down or popping up at times when you wished you'd never installed it in the first place.

The solution is to invoke it only when you choose – if, say, you are planning to be away from your desk for a considerable length of time. You can do this by assigning Program Manager icons and/or shortcut keys to the screensavers of your choice:

1. Using Notepad (or any other text editor), change the line in the win.ini file that reads `Programs com exe bat pif` to

```
Programs com exe bat pif scr
```

Then exit and restart Windows, so that this can take effect. To add a screensaver icon to an Application Group: from the Program Manager's File menu, select New, then click on the New Program Item radio button, then on OK. Type a description into the Description box and the command line in the Command Line box.

Valid command lines for the screensavers in Windows 3.1 are:

- SCRSAVE.SCR for a Blank Screen
- SSFLYWIN.SCR for Flying Windows
- SSMARQUE.SCR for the Marquee
- SSMYST.SCR for Mystify
- SSSTARS.SCR for the Starfield Simulation

...or any other .SCR files you may have.

You can also assign a shortcut key in the Shortcut Key text box, by pressing the key of your choice.

Before enabling the screensaver, it's a good idea to configure its options. To do this, press the shortcut key or double-click the screensaver's icon and make changes to the dialog box which appears. Here, you can also add a password.

Up to this point you won't be able to start the screensaver. To be able to start it by selecting the shortcut key or clicking on its icon you need to add the /S switch to its command line. To do this, select the screensaver icon, then choose Properties from the File menu. On the command line, add the /S switch. For example, enter the following in the Command Line text box:

```
SSSTARS.SCR /S
```

The screensaver program icon will now behave as any other program icon. It will start the screensaver when you double-click on it – handy if the boss walks in when you're playing Solitaire.

This will also provide an extra level of security when starting Windows. By giving the screensaver a password, then copying the screensaver into the Startup Group, it will start every time Windows starts, and no-one else will be able to use your Windows installation just by typing Win, unless they know the password (see adjacent panel).

## Security using progman.ini

Being 100 percent sure that the subject of machine security will crop up repeatedly, we offer here a few more restrictions you can apply, this time by using the progman.ini file. Progman.ini is Program Manager's initialisation file. In essence, its purpose is to contain information which tells Windows what should appear in the Program Manager window and how these things should behave.

Generally speaking, settings in progman.ini are automatically updated by Windows when you create groups and make certain changes. But it's possible to make changes to progman.ini using a text editor like Notepad. For instance, you may wish to add a [restrictions] section to the usual [settings] and [groups] sections.

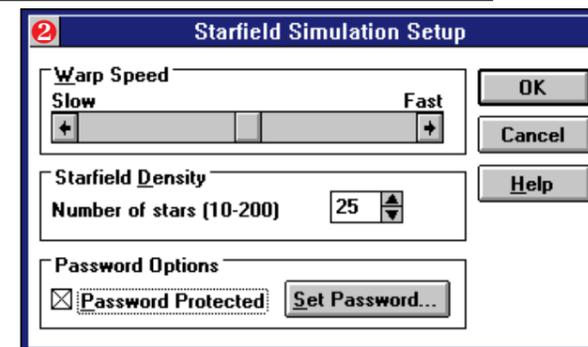
The [restrictions] section consists of

```
NoRun=
NoClose=
NoSaveSettings=
NoFileMenu=
EditLevel=
```

## Set a secure screensaver



1. Having added the .SCR extension to the Programs= line in the Win.INI and re-started Windows, add your screensaver as a New Program item in Program Manager

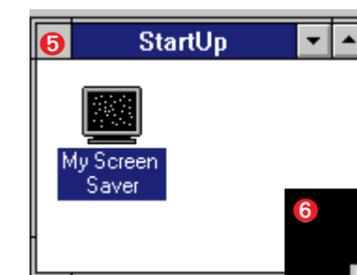


2. Double-click on the screensaver icon and change its options



3. Add a password

4. Click on the screensaver icon and add the /s to the command line in its Program Manager File properties



5. Move the screensaver to your Startup group

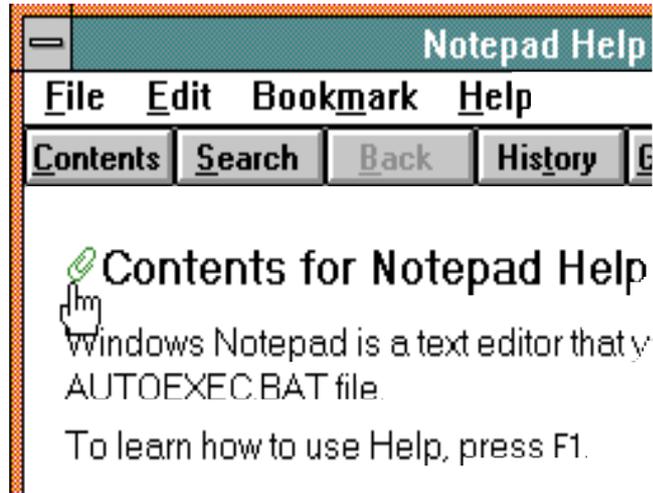


6. When you start Windows, you will now have to enter your password

## HELP help

To add your own comments to Help screens:

1. Go into Help and to the area in which you would like to add comments.
2. Click on Edit, then select Annotate.
3. Enter your text, and click on Save. You will notice that a paper-clip icon now appears on the screen.
4. When you click on this paper-clip, a pop-up window displays your text.
5. Click on Delete to remove the comment.



■ **NoRun=1 will disable** (dim out) the Run command on the File menu so a user won't be able to run applications from Program Manager unless the applications are set up as icons in a group. This prevents unauthorised use of certain applications.

■ **NoClose=1** disables the Exit Windows command on the File menu, so the user will be unable to leave the Program Manager via either the File menu or the Control menu (the Exit Windows and Close commands will be dimmed), or by using Alt + F4.

■ **NoSaveSettings=1** prevents the current settings being saved on leaving Windows, by disabling the Save Settings on the Exit command in the Options menu. It overrides the SaveSettings= entry in the [settings] section of progman.ini: useful when you've defined the settings you need and don't want anyone to mess them up permanently.

■ **NoFileMenu=1** removes the File menu from Program Manager (disabling New and Delete operations, in particular). But a user can still run applications with icons in groups. And unless you've disabled the Exit Windows command, a user can still leave Windows via the Control menu or Alt + F4.

■ **EditLevel=** followed by a number between 0 and 4 sets certain restrictions affecting the level of privilege applicable to making changes to the Program Manager.

■ **0** allows a user to make any change (the default).

■ **1** prevents anyone from creating, deleting or renaming groups. The New, Move, Copy and Delete commands on the File menu are unavailable when a group is selected and this can therefore be used in conjunction with the NoFileMenu=1 entry.

■ **2** sets all restrictions in level 1 and prevents the creation or deletion of program items. The File menu's New, Move, Copy and Delete commands are unavailable.

■ **3** sets all restrictions in level 2 and prevents anyone from changing command lines for program items. The text in the Command Line box in the Properties dialog box cannot be changed.

■ **4** sets all the above restrictions and prevents people from changing any program item information. None of the areas in the Properties dialog box (which will all be dimmed) can be changed.

■ To change your restriction settings, simply remove the entry concerned or set the value to 0.

But what's to stop a user getting into progman.ini and altering the settings to remove restrictions? That's another story!

## PCW Contact

If you have any queries or Win 3.1-related topics to discuss, contact **Panicos Georgiades** and **Gabriel Jacobs** at [Win3@pcw.co.uk](mailto:Win3@pcw.co.uk).



# What a performance

Panicos Georghiades and Gabriel Jacobs investigate SmartDrive, which is installed on your machine but uses some of your RAM. Learn how to alter settings to improve performance.

**T**here are many things you can do to your machine to increase its performance: get more RAM, get a larger and faster hard disk, get a faster graphics card, and so on. Of course, they all cost money. The cheapest and most effective option is to upgrade the RAM (12Mb is now our recommended minimum).

But there are other things you can do which don't involve buying anything, like taking a good look at how your machine runs and making a few changes to optimise its performance. Your machine is a team rather than a single worker, and the team needs to

be co-ordinated. Think of it as handling the queues at a supermarket, with ordinary checkouts, wide checkouts, checkouts for eight items or fewer, and so on.

While the performance of MSDOS programs relies mostly on how much free memory is available below 640Kb, Windows 3.x performance relies on the first few free megabytes of available extended memory, above what is required for Windows itself (a good average estimate to work with is about 3Mb).

Once Windows runs out of extended memory it starts using the hard disk to store

temporary files, and hard disk performance can be between ten and thirty times slower than that of RAM. A PC fitted with 8Mb of RAM can be as slow as a tortoise, while the same PC with 12Mb of RAM can run as smoothly as if it had 32Mb. It all depends on whether the additional 4Mb has made the difference between swapping to hard disk or working in RAM alone.

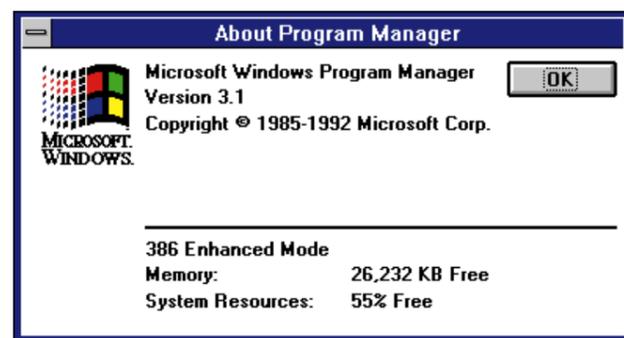
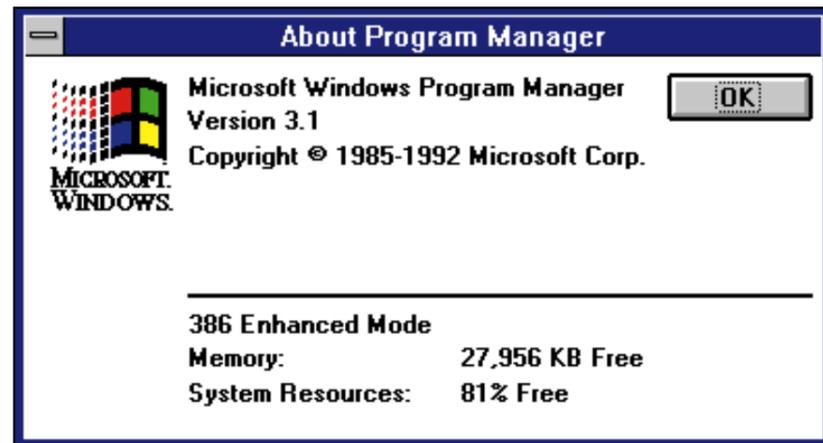
### Smart move

When your machine reads and writes data to the hard disk, it uses a program called SmartDrive (smartdrv.exe) to hold information in memory (in a so-called disk cache) so larger chunks of data are being manipulated at a time and fewer mechanical trips have to be made by the hard disk heads to the drive's magnetic material. If you can carry more things with you, you make fewer trips and your work is done more quickly.

SmartDrive is installed by default on your machine. It uses some of your RAM and you can alter the default settings to make things run more smoothly. On an 8Mb machine SmartDrive takes up 2Mb. The first megabyte of your RAM isn't available to your Windows programs either, since 640Kb is taken by MSDOS and some other bits and bobs like expansion boards (video cards, sound cards). Add in the 3Mb Windows itself needs and you're left with only 2Mb for your programs.

Many programs require more than 2Mb of RAM, and in these cases decreasing the amount of RAM used by SmartDrive from 2Mb to 1Mb can decrease, or even eliminate, disk swapping.

It's up to you to investigate how much RAM your individual programs use. Using Program Manager's Help and About menu option, check the amount of RAM you have



By checking memory beforehand and while an application is running you can estimate how much memory it uses

```
SMARTDRU 28816 <28K> 28816 <28K> 0 <0K>
KEYB      6224  <6K> 6224  <6K> 0 <0K>
CORELCDX  32464 <32K> 32464 <32K> 0 <0K>
CDXCACHE  2128  <2K> 2128  <2K> 0 <0K>
Free      500816 <489K> 500816 <489K> 0 <0K>
```

Memory Summary:

Type of Memory	Total	=	Used	+	Free
Conventional	655360 <640K>		154544 <151K>		500816 <489K>
Upper	0 <0K>		0 <0K>		0 <0K>
Adapter RAM/ROM	393216 <384K>		393216 <384K>		0 <0K>
Extended (XMS)	32505856 <31744K>		27836416 <27184K>		4669440 <4560K>
<b>Total memory</b>	<b>33554432 &lt;32768K&gt;</b>		<b>28384176 &lt;27719K&gt;</b>		<b>5170256 &lt;5049K&gt;</b>
<b>Total under 1 MB</b>	<b>655360 &lt;640K&gt;</b>		<b>154544 &lt;151K&gt;</b>		<b>500816 &lt;489K&gt;</b>
Largest executable program size			500256 <489K>		
Largest free upper memory block			0 <0K>		
MS-DOS is resident in the high memory area.					

Typing mem/c gives you a rundown of how your memory is used under MDDOS

those of InitCacheSize and WinCacheSize.

InitCacheSize sets the size (in kilobytes) of the cache when SmartDrive starts (before Windows is loaded). The larger the cache, the less often data needs to be read

available before you start a program, then after you've started it and loaded a file, and subtract one value from the other to get the memory used by a particular program. Your aim is to fit that amount of memory within the RAM of your machine.

It may be evident at this stage that your programs need a lot of RAM (say, more than 2Mb or 3Mb) and that you do need to upgrade your RAM by buying more chips. To find the physical memory available in your machine and how it's allocated, type:

mem/c  
from the DOS prompt, when you're not running Windows, not from the DOS prompt within Windows. And if you type:

mem/c >pcw.txt  
the information will be stored in a file called pcw.txt so that you can do your calculations while reading this from Notepad instead of having the information flash up on-screen.

You'll now see how much RAM is free after loading MSDOS and SmartDrive. Subtract from this the 3Mb Windows will take up and you'll be left with the amount your programs can use. If they can fit within that amount, there won't be much hard-disk swapping — you'll be able to see and hear whether this is going on anyway.

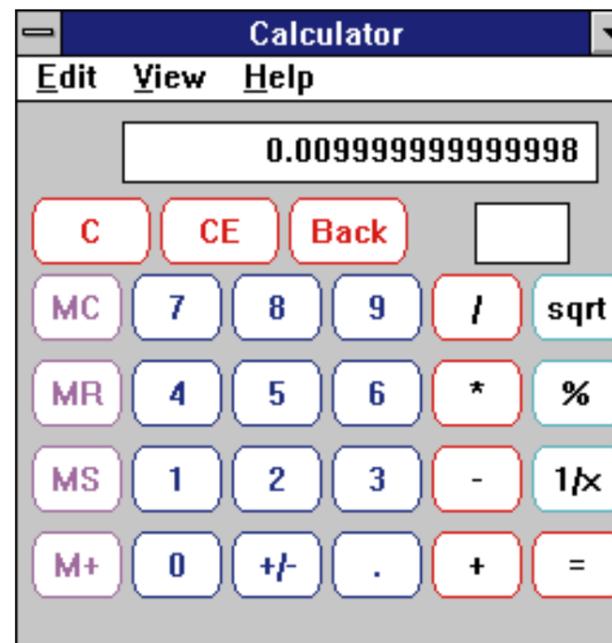
To change the values used by SmartDrive, while still at the DOS prompt go to the DOS directory (cd \dos) and type

Help. Follow the instructions and check the syntax for SmartDrive. The two values of most interest to you are

from the disk. If you don't specify a value, SmartDrive will set one according to the amount of memory your machine has.

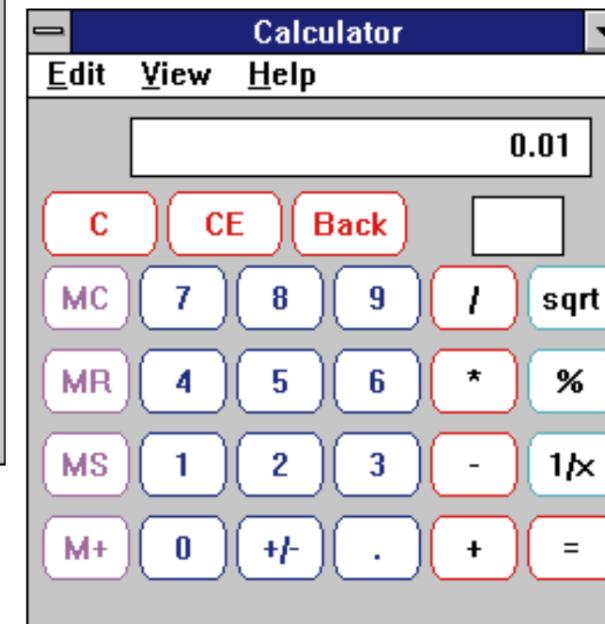
WinCacheSize specifies (in kilobytes) how much the cache size will be reduced to allow for Windows itself (when you exit Windows, it returns to its initial size). The default value depends on how much available memory there is, but if you specify a value smaller than that allocated to WinCacheSize, InitCacheSize will be set to the same size as WinCacheSize.

If you're not running any DOS programs which require extended memory, both these values can be equal. We recommend a larger SmartDrive value if you think your hard disk is slow, and vice-versa. However, these values must be relative to the total RAM in your machine and we recommend no less than 512Kb for the WinCacheSize and no more than 25 percent of your total RAM for the InitCacheSize.



Above Old calculator result

Right New calculator result. See this month's disk for the upgrade to Windows Calculator



## DLL dramas

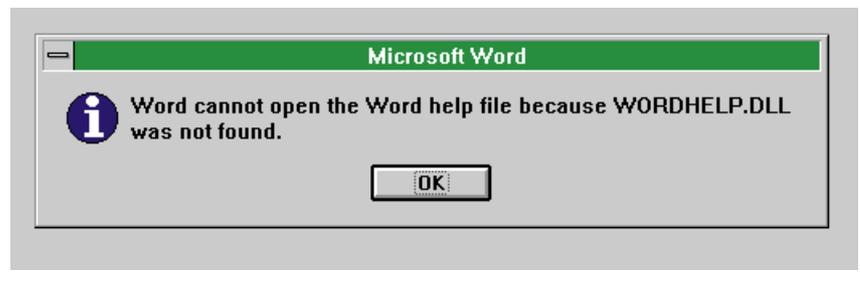
*Q. "I would appreciate your guidance on why DLLs seem to cause problems in Windows. I recently had to reinstall Word on a laptop. All seemed fine until I ran the application. At 9.30pm the only help I could think of was the Microsoft support desk in Canada! They very quickly identified the problem and helped me to edit a couple of DLL files before reinstalling Word again. This seemed to solve the problem but I didn't get round to asking for an explanation. Can you assist?"*

**Chris Kushner** [100634.75@compuserve.com](mailto:100634.75@compuserve.com)

**A.** DLLs (Dynamic Link Libraries) themselves generally don't cause problems, but they appear to because when errors are reported on the screen they refer to the DLL which was being called at the time.

DLLs are executable files that allow Windows applications to share resources. So, as their name suggests, they can for example link applications so that when one is updated, the other application takes account of the update. They're often to be found in the Windows or Windows\System directories, but can also reside elsewhere. They usually have a .DLL extension, but some have .EXE and other extensions.

If an application is missing one of its DLL files, an appropriate and quite commonly seen error message will appear: "Can't find ...." (make sure that the DLL file is in the correct directory). If an application is started with an outdated DLL file, the error message "Call to undefined dynalink" will be displayed, and that may well be the error message you got. We presume that the Canadians told you how to update the files.



But there are no hard and fast rules. Play within those two limits and see if you can improve the performance by cutting down on disk swapping. Note that Windows for Workgroups 32-bit File Access replaces the functionality offered by SmartDrive. Cacheing is automatically disabled for drives using 32-bit File Access and its memory use is reduced to 128Kb. You still need to use it, however, for cacheing CD-ROM drives.

It's important you use the latest version of SmartDrive available to you, as there can be enhancements you require. You can check which version you have by typing:

```
smartdrv /s
```

Version 2.1 shipped with MSDOS 4.01, version 3.0 with Windows 3.0 and Windows 3.0a. Version 3.13 shipped with MSDOS versions 5.0 and 5.0a, and Version 4.0 shipped with Windows 3.1 and 3.11.

Version 4.1 came with MSDOS 6.0 and included support for DoubleSpace. Version 4.2 was available through online services only and included a switch to clear the cache. The latest versions are 5.0 which shipped with MSDOS 6.20 and 6.21 and Windows for Workgroups 3.11 (the first version to support cacheing for CD-ROM

drives) and 5.01 which shipped with MSDOS 6.22, fixed problems with Kodak Photo CDs and included support for DriveSpace disks.

### It all adds up to a new Calculator

On this month's CD-ROM and floppy disk we distribute a new version of the Windows Calculator, released by Microsoft, which fixes a bug that occurs during subtraction of decimal numbers and also makes the calculator behave more like a handheld one. The bugged version comes with Windows 3.1 and 3.11. Try 25.22 minus 25.21. You'll get 0.00, 0.0099999999, 0.010000001 or 0.0000, rather than the correct answer of 0.01. Try also  $(1/3 + 10 - 10) \times 3$ . You'll get 1.0 not 0.9999 which is what you would get on a handheld calculator. This is due to the fact that significant digits are lost by adding and subtracting 10.

See this month's disc for instructions on how to install the new Windows Calculator.

### PCW Contact

If you have any queries or Win 3.1-related topics to discuss, contact **Panicos Georghiadis** and **Gabriel Jacobs** at [Win3@pcw.co.uk](mailto:Win3@pcw.co.uk).



# Font memories

It's not goodbye but *au revoir* to too many TrueType files — they can slow things down. Panicos Georghiades and Gabriel Jacobs show you how to group fonts for specific jobs.

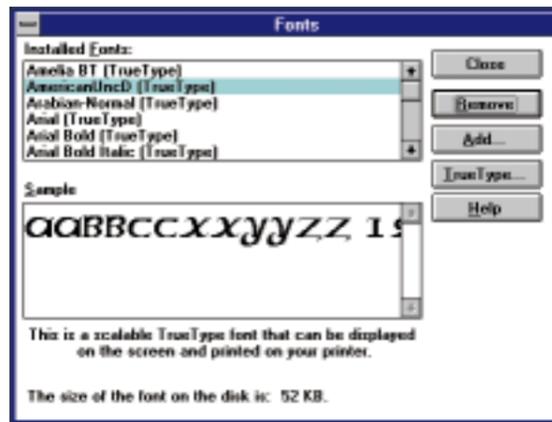
Windows, and most of its applications, copy and store TrueType font files to the Windows\System subdirectory. But having lots of fonts installed (more than 100, say) can slow things down. So, it is a good idea to keep groups of fonts dedicated to different jobs in separate directories, and to edit the [Fonts] section of your win.ini file to keep only those fonts you need for a particular job, by adding or subtracting groups of entries.

Suppose you want to manage three groups of fonts: one for everyday use, the other two for projects on which you work only occasionally. Keep the everyday ones in the Windows\System subdirectory, create two other directories (for instance, Project1 and Project2) and install the fonts as necessary.

To move the currently installed TrueType fonts to a directory other than the default Windows\System subdirectory, open the Fonts icon in the Control Panel. Select all the TrueType fonts you want to move and then choose the Remove button.

The Remove Font window will ask for confirmation about deleting each TrueType font. Make sure that the Delete Font File From Disk check box is *not* checked, and then choose the Yes button — in other words, remove the fonts from the installation, but not from the hard disk (Figs 1 & 2).

Next, from File Manager move all the .TTF files, of those fonts you want moved, to the two directories (Project1 and



**Figs 1 & 2**  
Remove fonts but do not delete them from the disk

Using an editor such as Notepad (run two instances) you can cut out and save to two separate files (say, project1.txt and project2.txt) the group of entries referring to the fonts in the two different directories. This will leave your win.ini with only the fonts for normal use. Each time you want to use the special fonts, all you need do is edit win.ini and paste in the lines you have previously cut out.



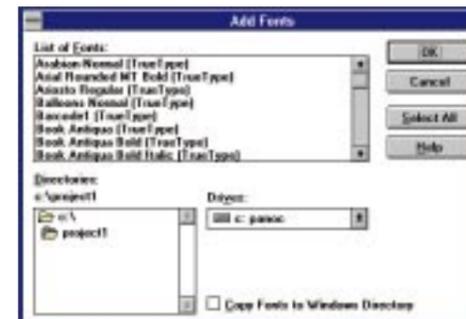
Project2). Restart Windows, and from the Fonts icon in Control Panel choose the Add button. Specify the c:\project1 directory from the bottom of the Add Fonts dialogue box. Windows will begin retrieving all the font names from that directory (Fig 3).

Disable the Copy Fonts to Windows Directory option by clearing the check box at the bottom of the Add Fonts dialog box, choose the Select All button, then OK. Do the same for the Project2 directory fonts and restart Windows.

The [Fonts] section in your win.ini will still contain entries which will refer to .FOT font files in the Windows\System subdirectory, even though the .TTF files (the largest in size) are now in the Project1 and Project2 directories.

**Question time**  
**Q.** "Is there definitive literature on Windows for Workgroups 3.11 that explains the meaning of all valid entries in the system.ini and win.ini files, the relationship of these files and their entries in the registry and the software that may have caused the entries? I ask this with a view to removing any which are not required."

"In my win.ini file I have the title [wt4gpi8s56bz]. This precedes a selection of font types which are repeated in the section titled [fonts]. In my system.ini file under [386ENH] I have the following three entries:  
COM1AUTOASSIGN=  
COM2AUTOASSIGN=  
LPT1AUTOASSIGN=



**Fig 3** Re-install the fonts but do not copy them to the Windows directory

"What are the valid parameters?"  
CA Hewitt  
cc@dartnet.co.uk

**A.** The [wt4gpi8s56bz] section in your win.ini is the remainder of an aborted or failed upgrade session.

During an upgrade session (say from Windows 3.0 to 3.1 or 3.11) the first part of the Windows Setup disables certain Windows components: namely all fonts except the system, fixed pitch, and OEM fonts, the Shell (Program Manager, Norton Desktop for Windows, and so on), the desktop bitmap, screensavers, Task Manager and installable drivers loaded through the Drivers= line in the system.ini file. These components are to be replaced by the new version's components so that they don't interfere with the upgrade process.

If the Setup process is interrupted before the Windows graphical user interface mode portion has been completed, some or all of the above items may not be properly re-enabled. Fonts are disabled by renaming the [Fonts] section in the win.ini file to [wt4gpi8s56bz].

Setup can encounter problems with re-enabling the old fonts if the system memory is very low or if two aborted installations have occurred. If there is a problem, Setup will display a message box telling you that trouble was encountered when restoring the previously installed fonts and that the [Fonts] and [wt4gpi8s56bz] sections must be merged by hand. So to do this:

1. Open win.ini using Notepad.
2. Delete any line from the [wt4gpi8s56bz] section that is duplicated in the [Fonts] section.
3. Append the contents of the [wt4gpi8s56bz] section to the [Fonts] section.
4. Delete the [wt4gpi8s56bz] section.

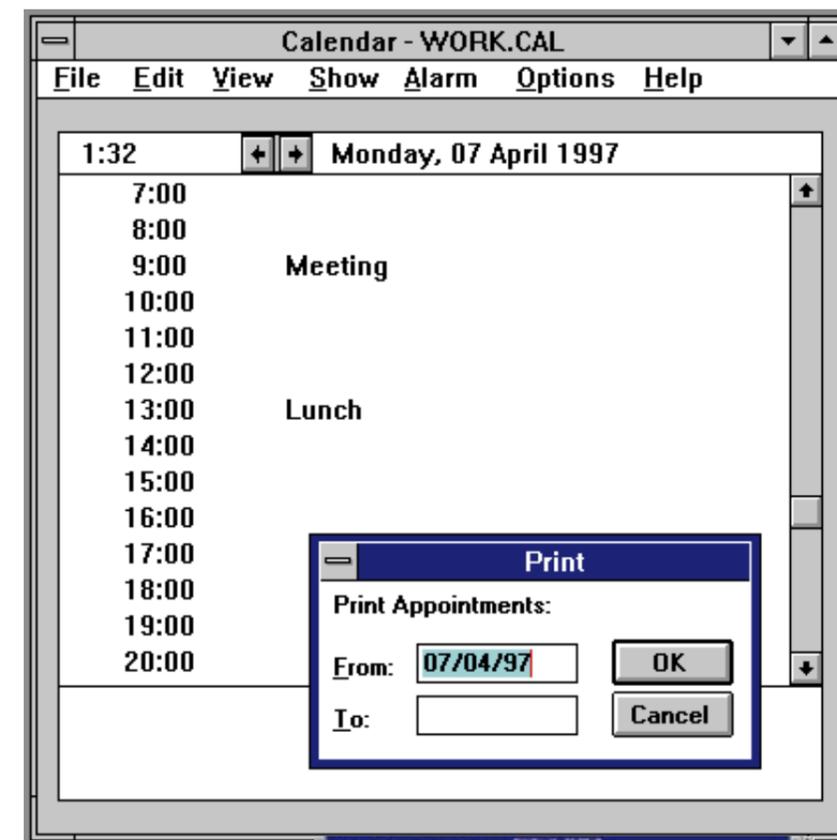
The COM1AutoAssign= and COM2AutoAssign= lines indicate how Windows will treat requests for the use of your communications ports by more than one application if one of them is a non-Windows application.

A value of 0 means that any application can use the port at any time. A value of -1 means you will get a message asking you which application should be given control of the port.

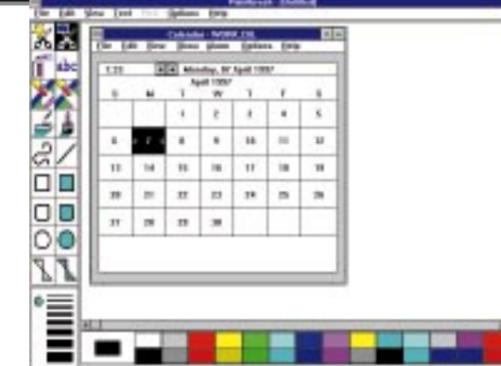
The value of a positive number up to 1,000 represents the number of seconds after an application stops using the port before another application can use it (the

## Calendar tricks

Many people use Windows Calendar as a simple alternative to Lotus Organizer and its ilk. Unfortunately, it is very limited. For example, it will not allow you to print the Month View grid. However, it is possible to do this by pressing Alt +PtrScr to capture the grid to the Clipboard, opening Paintbrush or any similar program, pasting the picture, and printing it (Figs 4 & 5). Or, Calendar will print only appointment times if there's an entry. So, to print blank entries, simply enter a space on the relevant time line(s). By the way, put Calendar first in the Startup group, and you see immediately what you've got on that day as you boot up.

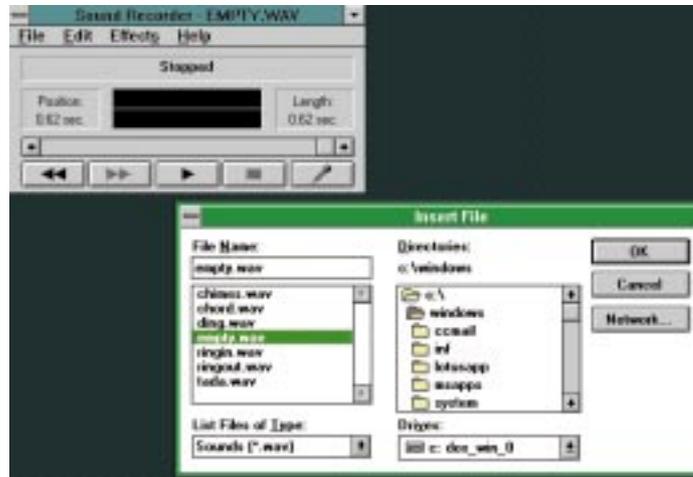


**Figs 4 & 5**  
To print the month view of the Calendar, copy the screen and paste into Paintbrush



## Sound Recorder

Sound Recorder is a free Windows accessory for playing, editing and recording sound files, although for recording you need a sound card and device drivers (to be installed in the Drivers section of the Control Panel). It's designed for small voice message files you would usually attach to documents, as opposed to long pieces of music. For this reason, it has a maximum default recording time of 60 seconds, but you can increase this time using this technique: Record for the 60-second duration and Save As using any name, say "empty.wav". Next,



choose Insert File from the Edit menu, and select empty.wav. This increases the recording duration to 120 seconds. You can repeat the process as many times as you like, to increase the recording time, until there's not enough memory to continue.

default is 2). To change a value, use the 386 Enhanced icon in the Control Panel.

The LPT1AutoAssign= entry is for your printer port and applies only to Windows 3.0. As in your case, although it may still appear in the system.ini after an upgrade, it will have no effect.

### Template time

*"Regarding your 'Step-by-Step Guide to creating Write Templates' [PCW, April]: Although you are correct about using templates — and also probably following Microsoft's 'right way to do things' — when creating templates from Word or any other application, you can get away with just putting the path and filename of the template. Provided the file type is registered in File Manager, the relevant application will automatically be launched.*

*"I know this saves very little time compared with using a template but I had never thought of doing it the way you suggested. However, doing it in the way I have mentioned above has never been any trouble to me. Well, it takes different strokes, doesn't it?"*

Justin

[justinc@j-catter.demon.co.uk](mailto:justinc@j-catter.demon.co.uk)

Yes, this will work fine for the example we gave about using templates with Windows Write (as well as with lots of other

programs). But be careful with templates that involve file types which can be associated with different programs; usually images (BMP, PCX etc. and files like TXT and DOC). New applications you install have a tendency to associate files to themselves.

### Quick switch

*"Having read your column about booting Windows 95 and MSDOS off the same hard drive [PCW, March], I thought I should mention that there is an easier way to switch back to DOS on booting.*

*"In your article, you mentioned pressing F8, then going to option 8. Instead of pressing F8, try pressing F4 and it will perform these two steps in one."*

Chris Beaumont

[cbeaumont@compuserve.com](mailto:cbeaumont@compuserve.com)

Thanks, Chris. This undocumented option is what was used in the beta release of Windows 95 and it still works, provided you don't want to access any of the additional Start options available with F8.

## PCW Contacts

If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georghiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk).



# All that glitters...

Even if you upgrade your RAM, you may still get "low memory" messages; it's the first megabyte which sets the gold standard. Panicos Georghiadis and Gabriel Jacobs explain.

**O**ur March column, which dealt with installing Windows 95 and Windows 3.x/DOS on the same machine, struck a chord with many readers. We have been fairly inundated with queries about specifics, so here is a selection.

**Q.** "Your article encouraged me to try the Win95/3.x/DOS combination. As my present setup already has a multi-config start-up menu, I'd like to check whether or not this may cause problems? I hope it will be straightforward and that I can continue to enjoy multi-choice in DOS."

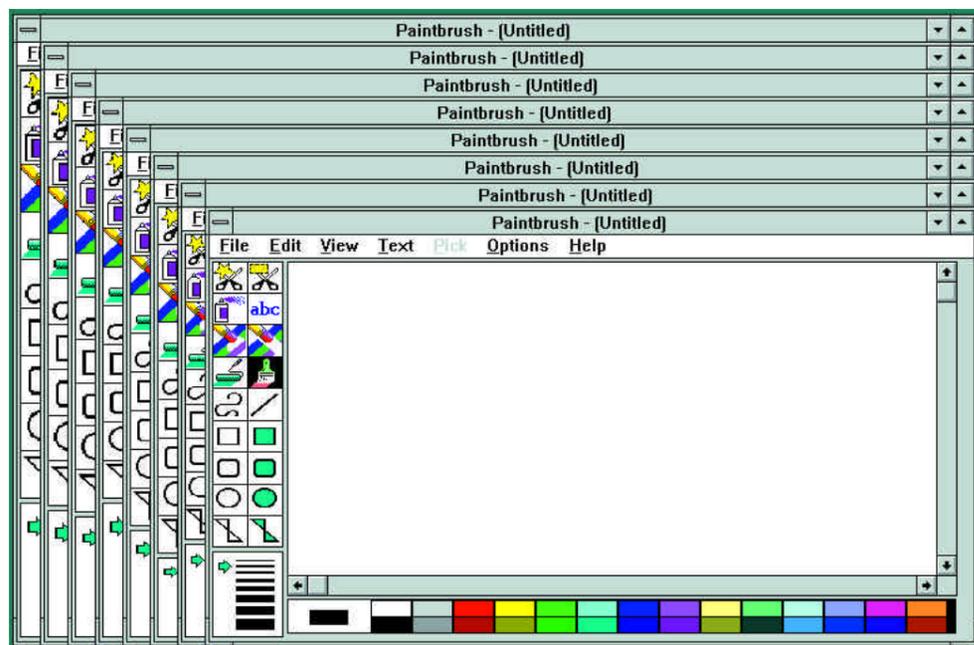
**James McFarlane**  
j.mcfarlane@uea.ac.uk

**A.** There will be no problems with your present DOS multiple-boot configuration menu. Since this is part of your DOS config.sys and autoexec.bat setup, it will come into effect only after you have selected to start with DOS instead of Windows 95.

**Q.** "Having installed Windows 3.11 and Windows 95 onto the same hard drive in directories Win3.1 and Win95, is it necessary to load software into C:\win95\application or C:\win31\application, or do you just load them into C:\application?"

**John Wright**  
john\_wright@compuserve.com

**A.** As we said in the article, only a few simple programs can be run from both 3.1



**Fig 1** The size of the opening window of some applications depends on available resources. As resources get less, so does the size of the window [see James Thompson's letter, overleaf]

and 95 installations: those that don't, keep settings in the Windows INI files, and don't have their own INI files in the Windows directories. All the others must be installed twice; once for 3.1 and again for 95.

We don't recommend that you run programs installed under Win3.1 in Win95 or vice-versa. The idea is to use 3.1 for those programs that can't be run under Win95, either because they do something specific or incompatible, or because they use hardware peripherals for which you don't have 32-bit 95 drivers. Anyway, if a program runs OK in Win95, why run it under Windows 3.1?

To avoid problems, think of the two installations as two sides of a coin which

should never interfere with one another. The straight answer in your case is that you need to keep both application directories separate.

**Q.** "I'm using Win3.1 but I also want to use Win95, and having read your article, I want to attempt the dual operating system. However, I've managed to get myself Win95 OEM, and was wondering if it is still OK to load it together with Win3.1. I understand that the OEM version handles FAT32, and I am not sure if it will still be safe."

**Panos Panayides**  
PAN4DEM@aol.com

**A.** You can't install both operating systems

using the method we described if you have the OEM version that uses FAT32 (File Allocation Table), otherwise known as the OSR2 version. Microsoft technical support says that you need a fix program which you can get from them.

**Q.** "I'm a long-time PCW subscriber, still on DOS 6 and Windows 3.1. Could you please tell me how to ensure that an application always starts in a maximised window? Some of the programs don't seem to have an INI file associated with them."

**James Thompson**

**A.** Under normal circumstances, unless your application has its own INI file or some special setting that goes in the win.ini file, you can't set it up to start maximised. This is true of applications such as Write and Paintbrush which open up windowed, and the size of the windows depends on resources — if you keep opening windows one after the other, they will get smaller and smaller (Fig 1). With applications that have an INI file, the setting would be `Maximize=1`

If you have Visual Basic or some other Windows programming language, you can write a little program which will start the application you want and then maximise it, using the SENDKEYS command which sends keystrokes to the application you have executed.

### One megabyte is worth its weight in gold

You've just upgraded your memory to 16, 32, or even 64Mb of RAM and yet you are still getting messages like "Application Execution Error", "Insufficient memory to run this application", "Quit one or more Windows applications and then try again", or "Not enough memory available".

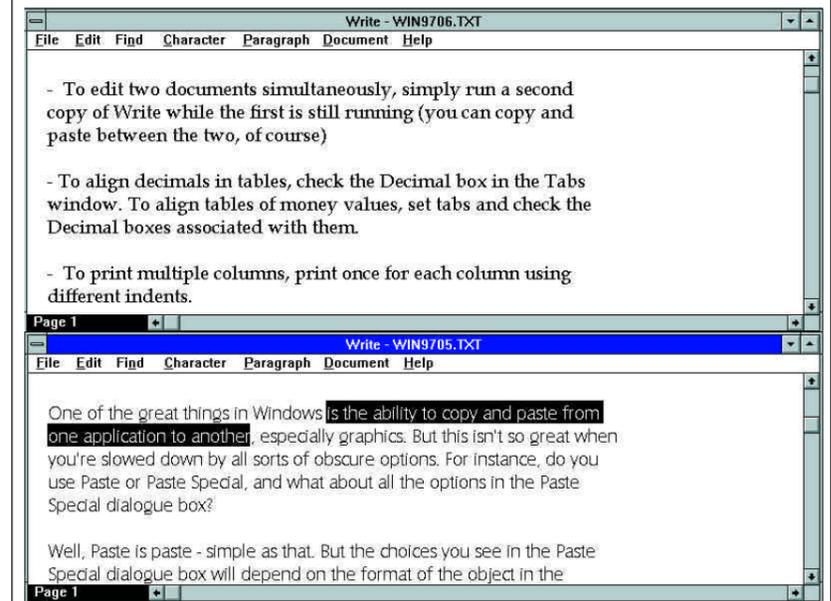
You're not alone. Low memory is the root of many computing problems, and in many circumstances this isn't due to the physical memory in your machine. Unfortunately, when error messages refer to "memory", they're not all alluding to the same thing. Computer memory is divided into many different chunks, each with its own name and its own job to do. And the most important of these chunks is the first megabyte; the one in which DOS resides.

When Windows starts a new program (a task), it creates a task database (a TDB) for it. This contains vital information such as its current directory, its instance handle, and so on. To maintain compatibility with 16-bit Intel processors and MSDOS, the TDB is

### The Write stuff

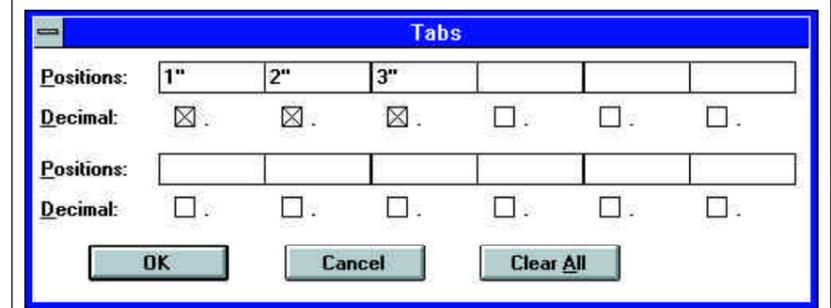
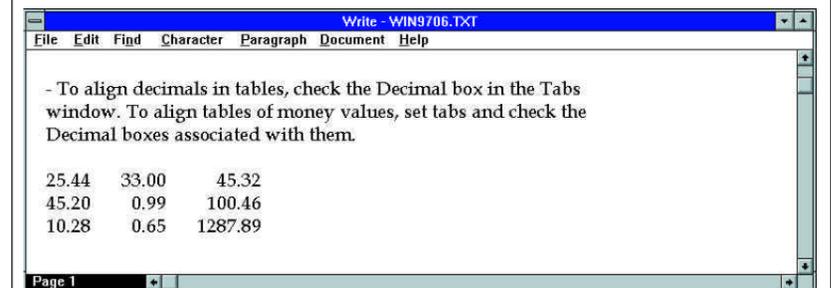
When using Write:

- For a soft hyphen, press Shift + Ctrl + Hyphen (this is useful with the paragraph justify setting).
- To select all, (mark) the entire document, press Ctrl and click between the left margin and the left edge of the screen. This is far easier than dragging the mouse through pages and pages of text.
- To edit two documents simultaneously, simply run a second copy of Write while the first is still running (you can copy and paste between the two, of course).
- To align decimals in tables, check the Decimal box in the Tabs window. To align tables of money values, set tabs and check the Decimal boxes associated with them.
- To print multiple columns, print once for each column using different indents.



**Above** To edit two documents simultaneously, run Write, twice

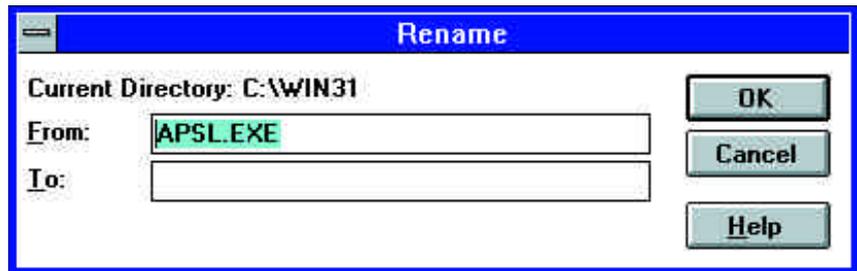
**Below** To align numbers or currency, use the Tabs settings and check the decimals box



## New names for old — a fast rename tip

When you rename a file in File Manager, the cursor goes automatically to the To: line in the Rename dialogue box, and you're expected to type in the new name. Very often you want the new name to be something like the old one. If so, you can avoid some re-typing by copying the old name in the From: line to the To: line. This is especially useful with convoluted or otherwise difficult filenames.

Unfortunately, you can't simply copy the filename by dragging and dropping. But there is a way around this. Highlight the old name (or part of it), press Ctrl + C, click on the To: line, and press Ctrl + V. You can then edit the new name in the To: line until you have the name you want.



Use Ctrl+C and Ctrl+V to copy the old name to the new name, then edit it.

created in memory below 1Mb — in fact, in the 640Kb of conventional memory. This section of memory on your machine is so much in demand and so limited, that it should be treated like gold.

TDBs are not the only block of memory that may end up below 1Mb. Applications such as Word for Windows, Microsoft Mail, Schedule+ and multimedia packages are examples of applications that put DLL files into the first megabyte of memory when loading or performing certain operations. As Windows loads segments of code, it gives each segment an attribute which determines how it will be treated. Segments are marked, by Windows, as fixed or moveable. Fixed code is allocated bottom-up and, as the name indicates, cannot be relocated. But moveable code can be moved or discarded to make room for other segments. If a fixed segment is too big to fit into the available space, Windows moves some moveable segments, if necessary, out of the first megabyte of memory.

If there's still insufficient room, discardable segments, which can be brought in later as required, are discarded. All this moving and discarding is controlled by a program called KRNL386.EXE.

An "out of memory" error that you get when you try to start an application may happen because fixed segments (precisely because they're loaded from the bottom up) have been loaded in the first megabyte. They cannot be moved and end up using space which Windows may require to load the TDBs.

What's the practical answer to all this?

There are several, but in general the idea is to free as much conventional memory as possible. You can optimise conventional memory (with DOS 6 or 6.2) using MemMaker, and/or you can achieve satisfactory results by changing the order in which programs and drivers are loaded. It's difficult to give precise advice here and trial and error is usually the order of the day: altering the loading order may well affect where the fixed code gets placed.

Creating a multiple-boot configuration can also help minimise what loads into conventional memory for particular operations — it may free enough space for Windows to load the TDBs.

Other techniques include:

- Disabling any applications that start automatically when you start Windows (check the win.ini file and the Startup group).
- Running Windows Setup and changing to standard Windows drivers (VGA, No Mouse, No Network).
- Using the Program Manager (PROGMAN.EXE) as your Windows shell.

Finally, for troubleshooting, remove any third-party Windows drivers or virtual device drivers (VxDs) by re-marking them using a semi-colon (;) at the start of the line in the system.ini file.

## PCW Contacts

If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georgiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk).



# Starters orders

How to get applications to open on startup, getting stuck in to Paste, and gaining the upper hand when your computer hangs. With Panicos Georghiades and Gabriel Jacobs.

The usual way of automatically starting programs when Windows is loaded is by moving (dragging) or copying (dragging while pressing down the Ctrl key) all the application icons you require into the Startup group window. To automatically start all the applications found within a particular group, you can change the name of the Startup group entry in the progman.ini file. Using Notepad, edit this file to contain the line

```
Startup="group name"
```

where "group name" (quotation marks are needed) is any acceptable group in Windows. For example, to start the applications in the group Project A (a group you created, and added in all the programs you require for a particular project you are working on), you would add the following line to the progman.ini file:

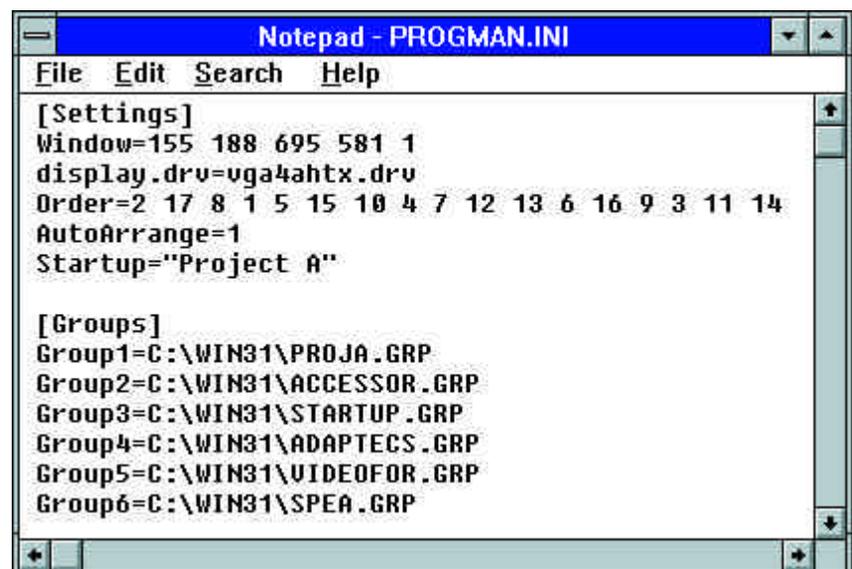
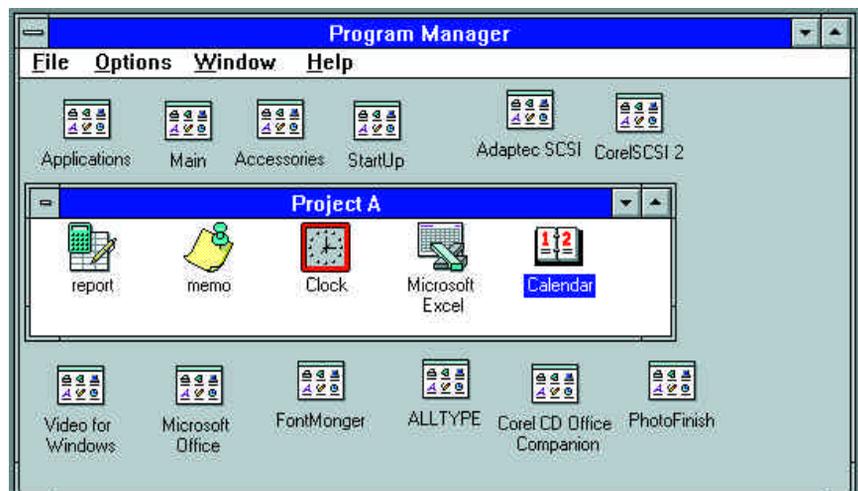
```
Startup="Project A"
```

Acceptable group names are what's listed in the Window menu in Program Manager or at the title bar of the group you want to start automatically. Adding the above line in the Progman.ini disables the Windows Startup group until the line is removed or commented out with a semi-colon (;) at the beginning of the line.

## What's a bitmap and what's a picture?

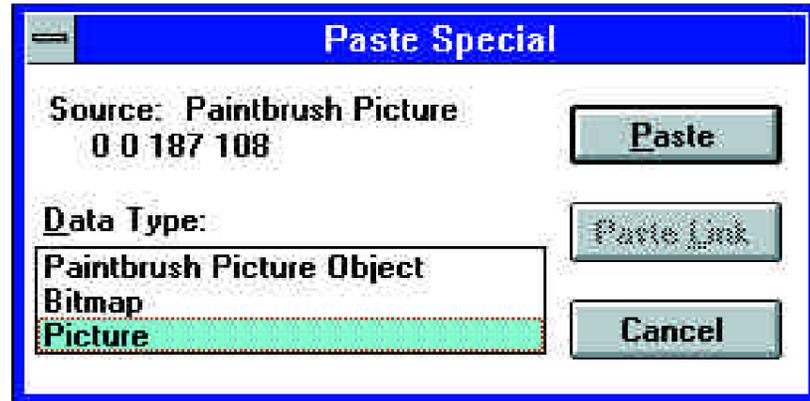
One of the great things in Windows is the ability to copy and paste from one application to another, especially graphics. But this isn't so great when you're slowed down by all sorts of obscure options. For instance, do you use Paste or Paste Special, and what about all the options in the Paste Special dialogue box?

Well, Paste is paste — simple as that. But the choices you see in the Paste



To automatically start all the applications in the group Project A (a group you created, and added in all the programs you require for a particular project you are working on), you would add the following line to the progman.ini file:

```
Startup="Project A"
```



Special dialogue box will depend on the format of the object in the Clipboard. This can be a bitmap or a Windows metafile (Microsoft calls this a Picture), and selecting either of these means that the object is not part of an OLE (Object Linking and Embedding) library: it's a so-called static object with no links to anything else.

If you select Bitmap from the Paste Special dialogue box, the object will be painted more quickly but will take up more disk space when the file is saved. The reverse is true of a Picture.

A bitmap file (extension may be BMP, PCX, TIF, GIF etc.) is a grid filled in with coloured dots. Its file size depends on its width and height in pixels and its colour depth: black and white (1-bit), 256 (8-bit) or 16 million (24-bit) colours. Scaling (resizing) of bitmaps creates distortions, jaggedness, and other unwanted effects.

A metafile or picture (the extension is usually WMF) often consists of a variety of different data structures (usually scalable vector graphics, but it can include bitmaps) and takes up little space. Metafiles can be scaled, and printed using the highest resolution of the printer. However, if one of the data structures includes a bitmap, then scaling will produce the same kinds of distortion of the bitmap element as you would get with an ordinary bitmap.

Try copying a graphic from a paint program to the Clipboard and pasting it into another application. You won't see much difference whether you choose Bitmap or Picture in the Paste Special dialogue box. Now copy a graphic from an application which normally uses the metafile format (Excel, say). Do this first by choosing Bitmap, then Picture, and see the difference.

**When in trouble ...**

When your computer hangs, or when you get a message about something being

unrecoverable, giving the machine the three fingers treatment (Ctrl + Alt + Del) isn't always the best choice. Various problems can cause software to behave badly or crash, and even make your machine go into a deep sleep. Some of these problems may be caused by incompatibilities between programs, or between programs and hardware, or between different pieces of hardware.

Sometimes (although not often) you may find an answer in the documentation. If not, you may have to contact a support service. But when you do, you'll have to tell them exactly what has happened, and for them to be able to diagnose the problem, it has to be one that can be repeated. If it can't be, you may have to do a lot of detective work to find out the cause. Most problems in computing are solved by a process of elimination, which means you often have to make a fresh start. And if your system has crashed, you will have to do this anyway.

There are three ways to restart a machine: (a) pressing Ctrl + Alt + Del (the three-finger method); (b) pressing the Reset button; and (c) turning the machine off, waiting for a while, then turning it back on. Never turn the machine off, then immediately on, as you risk wrecking your hard disk.

**Which method?**

The three-finger method is known as a warm reboot and in most cases skips the power-on self test. What's more, it generally doesn't reset all the adaptor cards in the adaptor slots. Using the Reset button (a cold reboot) usually makes the machine go through its self test, but doesn't necessarily cut power to the motherboard or (once again) to the adaptor slots. Therefore, to be sure that everything has been reset from scratch, you should turn off the power completely. After about 15 seconds, the

capacitors in the motherboard will have discharged and the hard disk will have stopped spinning.

If you use the three-finger method or the Reset button and the problem isn't cured, but it is cured if you turn the machine off and on, this implies a hardware problem, usually with a graphics card, internal modem, sound card or other controller.

One final, important point: If you're using a write-behind cache, make sure that the contents of the cache have been saved to disk before turning off the machine. You can do this with smartdrv.exe 4.0 or later by entering SMARTDRV /C at the DOS prompt.

**Disk dilemma**

Christian J. van den Bosch writes: "I had an empty 0.5Gb partition on my hard disk, and I decided to turn it into a compressed volume so I could copy a CD-ROM into it. I went into DOS, typed DRVSPACE, chose the partition, and chose to have 2Mb of uncompressed space on the drive (this being the minimum offered), but there were a number of anomalies. The process took about half an hour and included at least three defragment operations using Scandisk. The result was a 0.5Gb compressed drive occupying 340Mb of real space and a claimed compression ratio of 2:1, leaving 160Mb free (not 2Mb as requested).

"All attempts to enlarge the compressed drive (reduce the uncompressed space) were rebuffed: apparently, the remaining 160Mb of uncompressed space contained files that could not be compressed. In the end I just created a larger partition.

"Can you explain?"

[cjb@homenet.ie](mailto:cjb@homenet.ie)

It's normal for the process to take a long time, even half an hour, and normal for the Scandisk operations to check the disk. DOS DrvSpace (originally known as DoubleSpace) does not precisely double the space on your hard disk. Doubling is an estimation derived from an average compression ratio. Different files compress at different ratios depending on what they contain. We carried out some experiments on this, with the results shown (see the next column).

We can't explain why you got an estimate of 2Gb with a compression ratio of 2:1, except that sometimes the possible compression is overestimated. In any case, changing a drive's estimated compression

**Utility of the month: SYSEDIT.EXE**

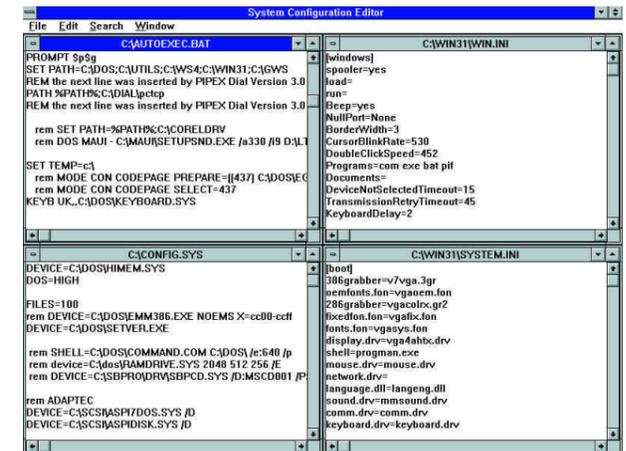


Sysedit

If you like playing about with system files — editing your autoexec.bat, config.sys, win.ini, or the system.ini files — there's a Windows utility called SysEdit which has been designed especially for this purpose. SysEdit.exe can be found in the Windows\System directory (it can't be run from DOS) and it opens all four files at the same time. It also creates a backup of the original file with an SYD extension. When booting a system from a floppy drive, note that SysEdit brings up the autoexec.bat and config.sys files found in the root directory of your boot hard drive, not the ones on your floppy.



You can run SysEdit by selecting File and Run from Program Manager



FILE TYPE	COMPRESSION RATIO (X:1)
Zip/GIF	1.0
BMP	1 - 10
ASCII	2*
Excel/Word	2.4
Programs (EXE, COM)	1.7
*Depends on content and whether it's 16,256 or 24-bit colour	

ratio doesn't affect how much DrvSpace actually compresses the files; it changes only the way DrvSpace estimates the free space on the compressed drive. However, having the wrong estimated compression ratio for your files can cause DrvSpace to provide inaccurate space estimates to

DOS, which can, in turn, result in problems when storing files.

Anyway, we don't recommend the use of DrvSpace any longer because hard disk prices have dropped so low. You can buy a 2Gb IDE drive for just over £160, so why bother with compression? DrvSpace takes memory from your 640K, it's slower to defragment or to check with Scandisk, and can affect performance in other ways. And there may be conflicts with other programs. Our advice is: hard disk compression out, larger hard disk in.

**PCW Contacts**

If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georgiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk)



# The mousetrap

Yes, it's a good old-fashioned whodunnit: when your mouse trips up while treading the, er, mat, you can help it get its act together. Panicos Georghiades and Gabriel Jacobs direct.

**W**ith standardisation on Microsoft-compatible mice, mouse problems have lessened but haven't disappeared. Mice can still fail to function at all, be too fast, too slow, move in certain directions and not others, and work in some programs but not others.

Mouse matters come in threes. There are three types of mouse: Microsoft, Microsoft-compatible, and Microsoft non-compatible; three different ways of connecting them: via the bus, a PS/2-style socket, and a serial port; and they can be used in three types of application:

1. DOS applications, in which case they usually require a driver loaded in the config.sys or autoexec.bat files.
2. Windows applications, in which case the driver is provided by Windows, or a Windows driver is provided by the mouse manufacturer.
3. DOS applications running within Windows.

And, yes, there are three different

## Adjusting mouse settings

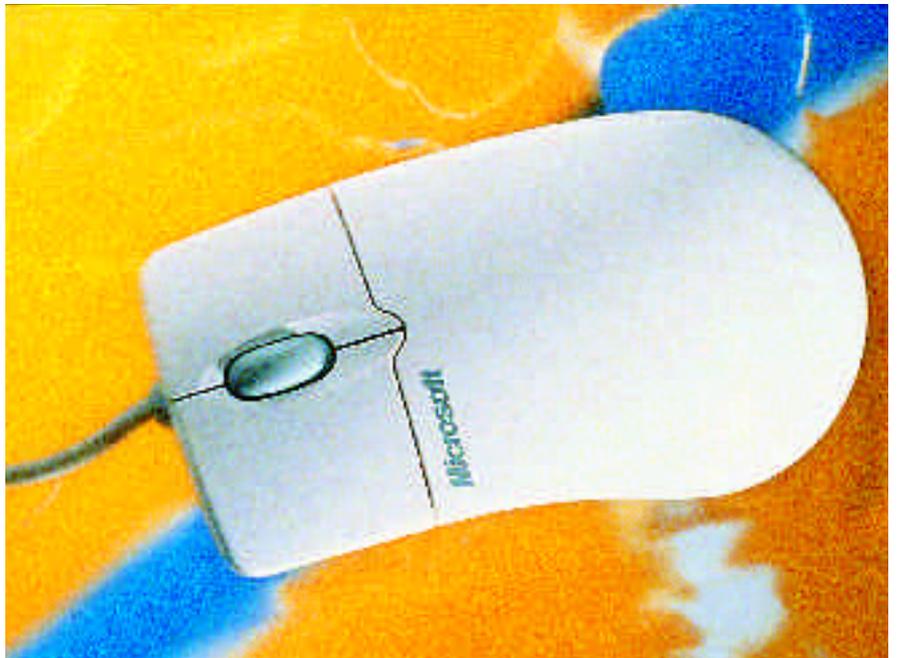
■ Lowering the Sensitivity value in the Mouse section of Control Panel makes the mouse movements less jumpy.

■ If the mouse is jumpy in Program Manager group windows, lower the granularity settings in the Desktop icon of Control Panel.

■ If you're using the DOS-based mouse driver mouse.com or mouse.sys version 7.04 or later, add the /Y switch to the end of the mouse command line

```
(c:\windows\mouse.com /y)
```

■ Note that erratic mouse movements may be specific to the application, video card, machine BIOS, keyboard BIOS, or machine type you're using.



When problems strike, are you a man or a mouse? Take valuable advice on failsafe fix-its

causes of mouse problems:

1. Hardware: the mouse isn't plugged in properly, it's a bad or unclean mouse, there's a bad mouse socket, a bad cable, a slippery or uneven mouse mat, or the mouse is connected to the wrong port or with a wrong or bad adaptor.
2. Bad drivers: an older or incompatible version is being used.
3. Conflicting software: your mouse driver may not agree with Windows, or a particular program, or with some other program running at the same time like a TSR program, anti-virus software, or screensaver.

A classic situation is using too many drivers. Manufacturers provide drivers for Windows and DOS (and sometimes for particular DOS programs) and nowadays for Windows 95. Don't install them all —

Windows may not run properly if DOS mouse drivers are also there.

So, if you have a mouse behaving badly, first check for hardware causes — plug it into another computer, or plug another mouse into your computer. Next, establish that the mouse works in DOS and in Windows separately. If the mouse doesn't work in a DOS application under DOS, it will not work in that application if you run it under Windows. Install the DOS drivers needed in the autoexec.bat and/or config.sys files, as described in the mouse's documentation, and ensure that all works fine under DOS.

If you have a Microsoft mouse, use version 8.2 of the driver which comes with Windows 3.1 and, if necessary, expand mouse.sy\_ and mouse.co\_ (they're on the

p264 >

Windows disks) to your hard disk as mouse.sys and mouse.com by using the EXPAND command at the DOS prompt. You can test whether all works well using a DOS program which supports mouse movements such as Edit. Then disable the DOS drivers by placing the word REM in front of the lines referring to them in the config.sys and autoexec.bat files, and check the mouse works under Windows.

The Windows mouse drivers are set using Windows Setup, and they appear in the system.ini file in the [Boot] section. Normally there should be a line like `mouse.drv=mouse.drv`

To check you have installed the right Windows driver, exit Windows, change directory at the DOS prompt to c:\windows, and type SETUP. If you get a message saying no mouse has been detected, select the Microsoft or IBM PS/2 option.

Note that some so-called Microsoft-compatible mice are more compatible than others, and you might have to use some trial and error. In particular, try the drivers which come with the mouse installation disk rather than the Microsoft drivers. If all the above fails, try the following suggestions.

- Search the drive for multiple mouse.drv files. If you find any, rename them to something else, except for the one in the Windows System sub-directory.

- Test the mouse on a different port.
- Check that there's only one mouse.ini file, and that the line

`MouseType =`  
in the [Mouse] section of the file points to the correct port.

- Try running Windows in standard mode. If all works well, try loading Windows by typing win /d:x. If all is still okay, add the following line to the [386Enh] section of system.ini:

`EmmExclude=A000-EFFF`

- Finally, if you're using a mouse that came with its own drivers, try to borrow a mouse that uses the driver supplied with Windows. If that works, contact the manufacturer of your own mouse.

**Out of Africa**

"I am doing voluntary work in Nigeria, and have been working on a stock-control and tracking program using DOS 6.22 and QBasic (the v4.5 compiler), but the compiled version of the program gives a totally incorrect output at the printer — the numbers are all wrong. Inspecting the code doesn't reveal much, as the only difference

lies in an LPRINT statement (to printer) and a PRINT statement (to screen). There is no problem with interpreted printed reports or displayed reports. I've tried two different printers — no difference. I enclose some output samples. My big fear is a virus, as they are rampant here."

**Leigh Bowden, Nigeria**

The Microsoft Knowledge Base doesn't list your problem, but there are a number of possible causes.

We doubt a virus is the culprit — virus programmers tend not to target something as old as QBasic! We assume that you're not trying to print while running the program in a DOS session within Windows, as this doesn't work with all DOS programs.

The output samples you sent us show that the text prints fine; only the numbers are wrong. This obviously implies that the problem lies in calculations or statements to do with numeric data only — perhaps a different set of calculations is being used to output to the screen than to the printer. Programmers sometimes attach calculation statements to PRINT statements, and since QBasic needs two different statements, one for the screen and one for the printer, the set for the printer may contain errors.

Alternatively, it may be that certain formatting commands used for the printed output don't work properly when compiled. In any case, check you're using the right version of the compiler for the version of QBasic you have, and that you're setting the right options for handling numbers for the compilation. Also, have you checked the compiler documentation for supported statements and commands? Some statements are supported by the interpreter but not by the compiler.

Another possibility is that certain formatting commands used for the printed output don't work properly when compiled. In any case, check you're using the right version of the compiler for the version of QBasic you have, and that you're setting the right options for handling numbers for the compilation. Also, have you checked the compiler documentation for supported statements and commands? Some statements are supported by the interpreter but not by the compiler.

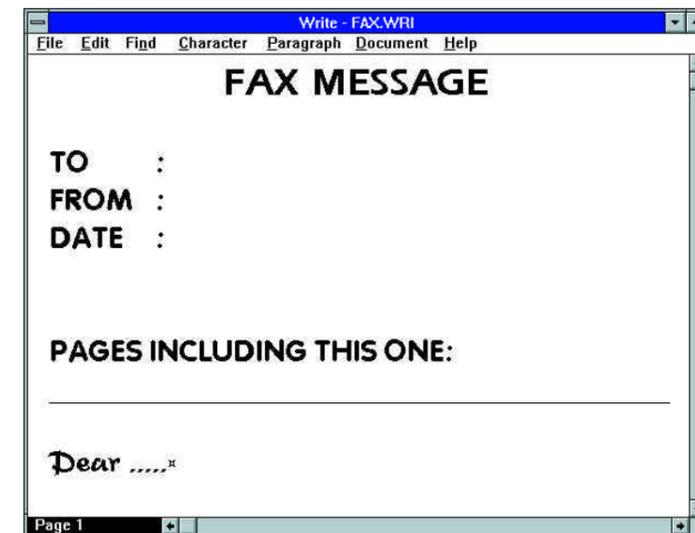
**The write font**

A frustrated Bill Reid (<mailto:reidw@nacn.dnet.co.uk>) mailed us about being unable to change the default font in Windows Write. Each time you start Write, the default font is Arial: he wants it to be Times New Roman.

Trying to answer this query has prompted us to write about a method of creating templates for Windows Write, to use for letters, memos, and faxes, a feature available on all mainstream word processors but missing from Windows Write.

You can create your own designs and save them as standard Write documents. Give them names like letter.wri, memo.wri

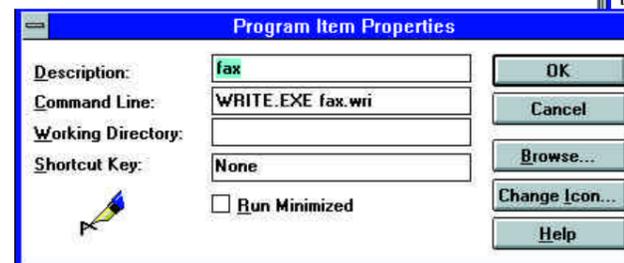
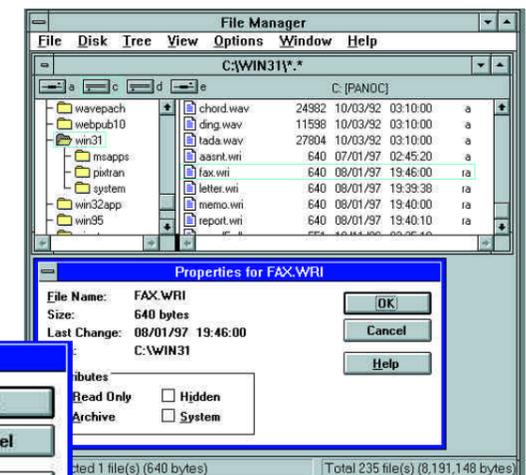
**A step-by-step guide to creating Write templates**



**Above** Create your templates in Write and save them as any ordinary Write documents

**Right** From File Manager make the template files Read only

**Below** Create multiple copies of the Write icon and edit each one to include the template file name in the command line



**Right** You will end up with multiple Write icons, each one starting a different template

**Below** To customise your templates even more, choose a different icon for each one using the icons embedded in Progman.exe, or any other icons you may have



and fax.wri. To prevent overwriting the templates, you have to Save As, not Save, and to avoid using Save by mistake, make your template files Read Only by changing their Attributes in the Properties option of the File menu in File Manager.

To use the templates you open Write, then use File Open to select a template, or you can assign icons to each template so you can open them with a double click. To do this, start Write and the template in one go by editing Write's Properties in the File menu of Program Manager. In the command line of the Properties dialog box add the filename of your template, so the command line reads, for example, write.exe letter.wri.

Do this for all your templates by clicking and dragging the Write icon while pressing the CTRL key to make copies of it, then editing each one's command line to include a different template filename.

Change the default Write icon to another one by using icons embedded in Progman.exe.

To change the default font

from Arial to something else, create an "empty" template. The only problem is that the template can't be completely empty, so

you need to type a space, say, then select that space with the mouse, and from the Fonts menu change the font to the one you want.

**PCW Contacts**  
If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georgiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk).



# Double trouble

Windows 3.x programs running under Win95 is not a happy marriage, but don't despair — Panicos Georghiades and Gabriel Jacobs explain how you can have the best of both worlds.

**T**he good thing about new versions of software is that they are usually better than their older counterparts. This was undoubtedly the case with Windows over DOS, as it is with Windows 95 over Windows 3.x. But we are talking here about general use rather than specific applications which, in some cases, do run better on an older operating system.

The bad points about upgrading to new versions (apart from the cost) are that newer software is more likely to have bugs, and your machine and peripherals may also need upgrading. There's also the fact that not everyone is upgrading overnight; it's a gradual process sometimes taking years to complete, by which time an even newer version is on the way.

It would have been great if, say, on the 24th August 1995, every hardware and software manufacturer on earth had Windows 95 versions and drivers available. We could all have upgraded immediately, and painlessly. This didn't happen, of course, and even a year and a half later, there's hardware out there which doesn't have Windows 95 drivers, and software which will never be upgraded to Windows 95.

Microsoft may boast that Windows 95 has sold more copies than Michael Jackson's "Thriller", yet the reality is that the majority of Windows users have stuck with 3.x (usually 3.1). Many large organisations have been holding back because they know that the cost, in time, of solving incompatibility problems from new software is often much higher than that of buying the new software in the first place.

So, if you're not fascinated by solving problems, we recommend that you run Windows 3.x programs under Windows 3.x,

and dedicated Windows 95 native 32-bit programs under Win95.

We're not saying that Windows 3.x programs don't run under 95, but problems arise with non-Windows 95 drivers for hardware, old Win95 drivers, and some program installation procedures. Even if a Windows 3.x program doesn't depend on drivers, its installation procedure, designed for 3.x, may cause problems under Windows 95. It may replace files with older versions, or it may install things like Video for Windows and other MCI Windows 3.1 code not needed in Win95. It may mess up your Win95 installation, to a point where your machine simply will not start.

In general, play safe: you're far better off running programs on the operating systems for which they were designed. On the other hand, Windows 95, like Mount Everest, is there. So the solution is to have the best of both worlds. If your machine runs 3.x and is not up to Windows 95, don't upgrade it. Keep it as a Windows 3.x and DOS machine to run your old software, and put the money you save towards a new Windows 95 machine.

If your machine is up to running Windows 95 and you have a large hard disk (1Gb or preferably 2Gb as hard disks are very cheap nowadays), it is possible to keep your old DOS/Windows 3.x installation as well as a new Win95 installation, on the same machine. This is fairly easy to do, and you can have both working in harmony (but not simultaneously) provided you watch out for certain things.

Here's what you have to do, although you can only do it with versions of MSDOS 5 or later (see Fig 1 for the technical reasons why):

■ When you install Windows 95 and you are asked in which directory to install it, choose a different directory name from the one that Windows 3.x is using.

If you are starting from scratch (which is not a bad idea) you can use names like Win31 and Win95. You will then be warned that you will have to re-install your applications — you will have to do that with your new Windows 95 programs anyway.

■ Go ahead with the Windows 95 installation as normal. Windows 95 will copy some of your MSDOS files (scandisk,

## Fig 1 Boot room

Why can't you have a double boot (Windows 3.x and Windows 95) with DOS versions earlier than 5.0?

The answer is that Windows 3.x sits on top of DOS, and in the earlier versions of MSDOS, the first three sectors of the `io.sys` file has to be placed in the first three sectors of the data area of the hard disk. Following version 5.0, this constraint was removed from DOS.

When you install Windows 95 on a PC running DOS 5.0 or later, the setup routine actually keeps your previous `io.sys`, `msdos.sys`, `command.com`, `autoexec.bat` and `config.sys` files after renaming them with a `.DOS` extension (`io.dos`, `msdos.dos`, and so on).

If you install Windows 95 in a new folder, the line "BootMulti=1" is automatically added to `msdos.sys`, after which you can have a double-boot configuration. But if you delete `io.dos`, `msdos.dos` or `command.dos`, or if they get damaged in some way, or even if you simply move them to any other directory except the root directory of the boot drive, you can't boot under DOS, and therefore you can't run Windows 3.x.

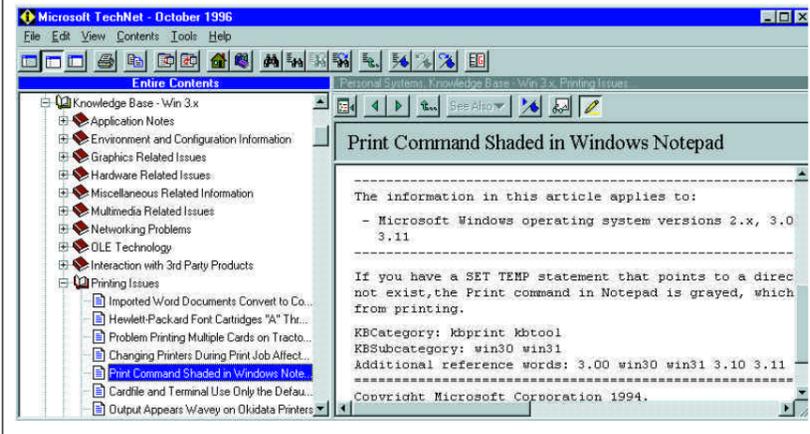
### Microsoft Technet: our productivity product of the month

There are many books, CD-ROMs, videotapes and all kinds of courses on Windows 3.x and DOS. However, the richest mine of information is to be found on Technet (Technical Information Network), a subscription CD-ROM from Microsoft. This monthly set of CD-ROMs contains specifications, updated drivers, press releases, lists of problems and their solutions, as well as hints and tips from the developers and technical support people at Microsoft on

not only Microsoft products but some third-party products, too. There are literally thousands of articles through which you can browse by using either an Explorer or File Manager tree-type structure, or the built-in search facility.

If you are working in a support department, or are simply interested to find out about how to get the best from your system, this is the tops.

■ See "PCW Contacts" box for details.



defrag, etc) into its own directories and replace them with batch files (Fig 2, below). It will also rename some of your DOS system files (see Fig 1) and will leave your Windows 3.x installation alone.

■ After Windows 95 has been installed, press the F8 key during boot-up (very shortly before the message "Starting Windows 95"). This will give you a menu with a number of options for starting up. One of them will be "Start your Previous Operating System".

If you select this, your machine will start as before under your DOS/Windows 3.x operating system. In other words, you should be able to run DOS and Windows 3.x as if Windows 95 were not there. The Windows 95 directory and programs will be

visible on your hard disk, but file and directory names will be shown in the DOS eight-characters-plus-three-characters format (using the ~ character) instead of the long filenames.

For example, the Windows 95 directory Program Files will look like this (see also, Fig 3):

Progra-1

■ After the message "Now loading your previous version of MS-DOS, please wait", you may get one of the following error messages:

Your previous MS-DOS version is not supported. MS-DOS startup failed.

or, you could get

Your previous MS-DOS files were not found. MS-DOS startup failed.

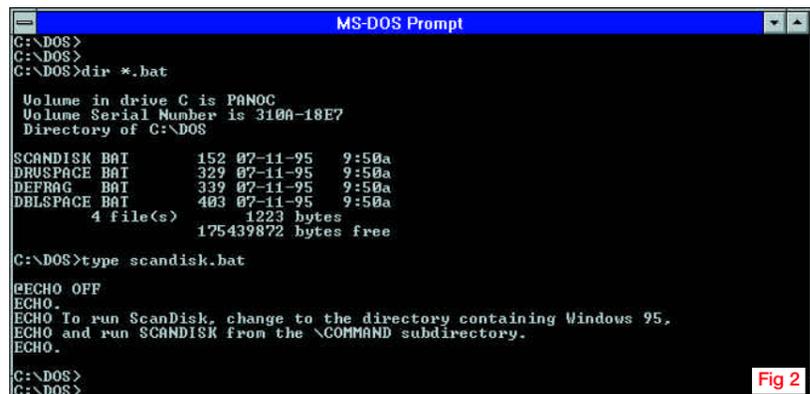


Fig 2

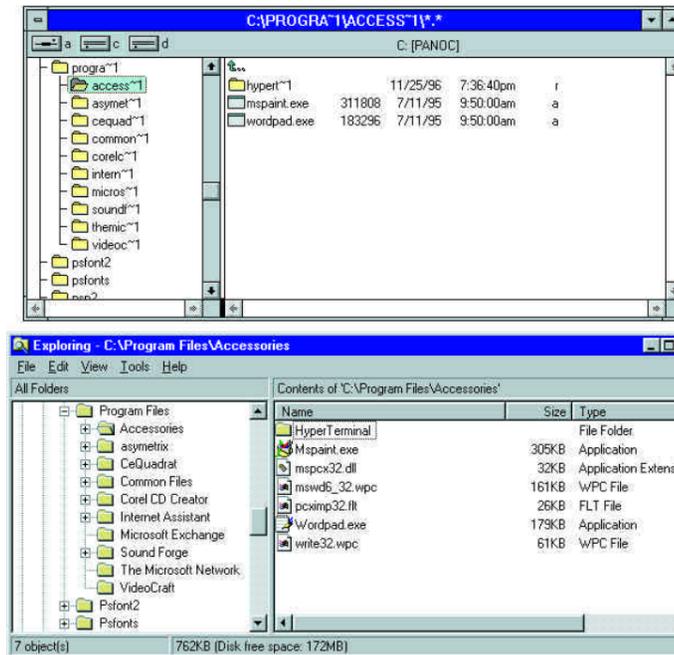


Fig 3 If you run Windows 3.1 and Windows 95 on the same machine, this is how the long filenames will look. This is normal

If you do receive one of these messages, you need to check whether the line `BootMulti=1`

is present in the `msdos.sys` file in the root directory of your boot drive.

■ If it isn't there, you will have to edit the file and add that line. But take note that even though `msdos.sys` is a text file (and can thus be edited in Notepad) it is also a read-only, hidden system file so you'll need to change its attributes to modify it. You can

do this in Windows 3.x File Manager, or Windows 95 Explorer, or by using the `ATTRIB` command at the DOS prompt.

#### Things to watch out for

This multi-boot option requires you to restart your machine (either a three-fingered warm reboot with `Ctrl+Alt+Del`, or Reset will do) as you can't switch between one operating system and another just like that. And, by the way, make sure Windows 95

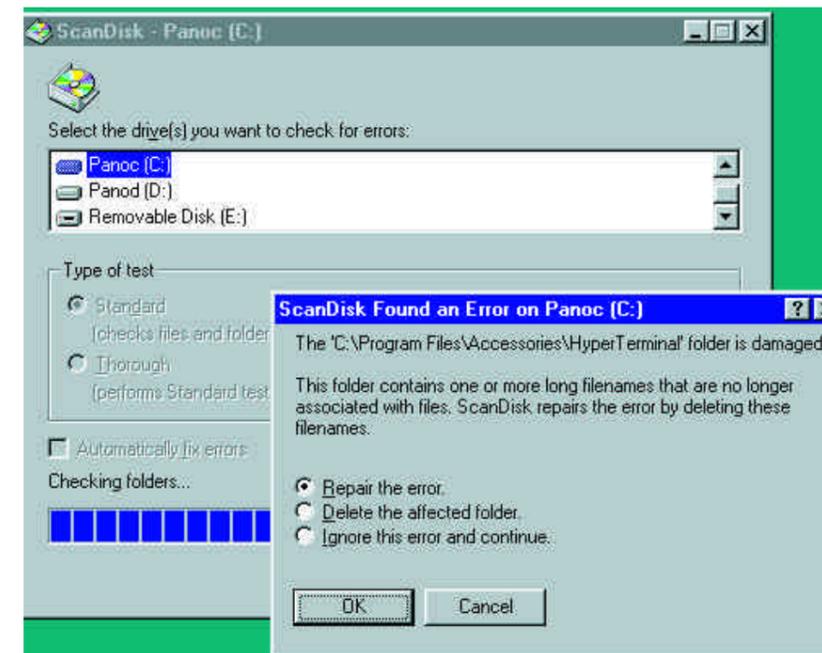


Fig 4 If you delete files with long names in Windows 3.1 or DOS, you may well encounter problems when running Windows 95

always shuts down properly first. Most PC manufacturers do not install Windows 95 over MSDOS, so if you have bought a machine with this standard type of Windows 95 installation, DOS system files will not be on it and you will not be able to have the dual boot unless you re-install everything yourself.

On top of all that, even though you can share data files and even run some programs under both operating systems, there are a few things of which you should be careful.

**1. Configuration settings:** Programs that keep their configuration (.INI) files in the Windows directory, rather than their own, may create two configurations and may run differently under the two operating systems. Don't expect the same settings to be available to you.

**2. Long filenames:** Use only the eight-plus-three format for any data files you intend to use under DOS and Windows 3.x. If you re-save or re-name a file (in Win95) created with a long filename, under Windows 3.x or DOS the name will be truncated and your long filename will no longer be available in your next Windows 95 session.

**3. Disk manipulations** (the importance of which cannot be over-emphasised): You should carry out all disk manipulations — defragmentation and scandisk operations, and as many file deletions and clearance sessions as possible — under Windows 95 instead of 3.x (Fig 4). At the very least, do not delete files with long filenames in a DOS or Windows 3.x session.

**4. Last but truly not least:** Do not use DOS and 3.1 disk tools (such as old versions of Norton and other, similar, programs) if you have Windows 95 in your machine. You may damage the Windows 95 installation.

■ Panicos Georghiades and Gabriel Jacobs have now taken up the mantle of Hands On Windows 3.1 from Tim Nott. In addition to writing his Windows 95 column as usual, Tim can also be found presenting Hands On Word Processing.

**PCW Contacts**

If you have any queries or Win3.1-related topics to discuss, contact **Panicos Georghiades** and **Gabriel Jacobs** at [Win3@pcw.vnu.co.uk](mailto:Win3@pcw.vnu.co.uk). Microsoft 0345 002000, web address [www.microsoft.com/TechNet/overview.HTM](http://www.microsoft.com/TechNet/overview.HTM)



# Light relief

So farewell then, Tim Nott — but only from the 3.1 column. He's going to try his hand at other Hands On highlights, but before he goes he wants to regale you with tales of shareware known and loved. By the way — did you know he cheats at Solitaire?

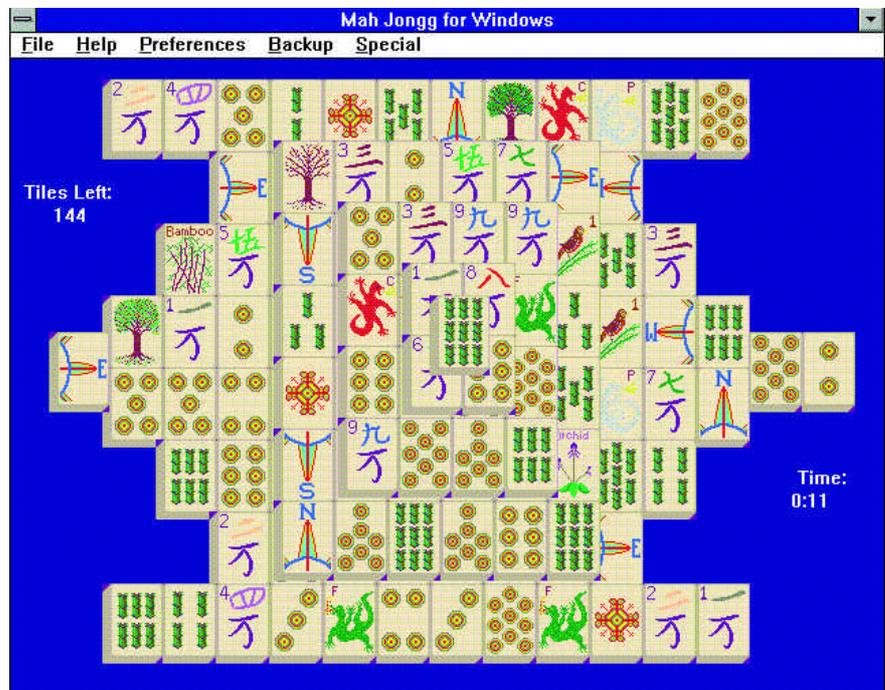
**M**y goodness, this recursion thing is a popular problem. You may remember this first saw the light of day in last November's column: the contents of a directory also appear in a sub-directory, and so on in an endless recursion.

Tony Hill showed how to replicate the problem with a disk sector editor and said that Scandisk would fix it. Well, I haven't tried this — I might be brave, but I'm not daft. Paul Harrison had it when, as he said, "I tried to run a DOS-only program under Windows" and was "pretty sure" that Scandisk would fix it, but reinstalled anyway. James Mackintosh had it doing something with Linux, Paul Butterwick blamed it on a faulty motherboard and Ray Girling on a faulty power supply. Robert Carrington-Jones encountered it several years ago on XT machines running DOS 3, which, he said, "...precludes any Windows influence and points to something more fundamental going on with DOS."

I'll leave the last word to the oddly-named Satanic Avatar (he seems quite a nice chap, in fact): "I think it may be related to a game installation. Lemmings had a curious pirate security; the HD disk had a directory n times replicated, which made it impossible for pirates to copy. I dunno what your readers have been doing, but..."

## Grovel

Several readers have pointed out that the Windows speaker driver which lets you play .WAV sounds through the PC speaker wasn't on last December's CD-ROM as stated. Sorry. It's such a tiny file it must have fallen through a crack in the online continuum. It should be on this month's disk in SPEAKER.ZIP (7,848 bytes).

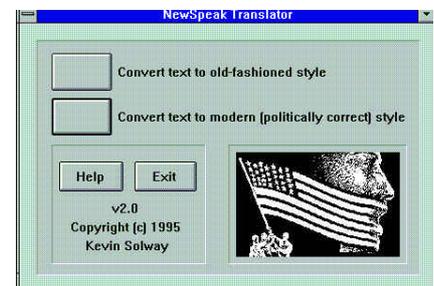


One of my all-time favourite time-wasters

## Hands off

Forty-two, besides being the answer to life, the universe and everything, is also the number of Hands On Windows 3.x columns I've written for PCW. In that time we've seen two new versions of Windows and covered subjects of fearsome technicality such as DDE, a blow-by-blow guide to the .INI files, and what the various types of memory mean and what to do when you run out of them.

We've done worthy things, such as weeding out redundant files and mastering the Object Packager. Since last April we've been dicing with DOS, too. We've also had a lot of fun customising Windows in ways the manuals don't tell you and playing with



Transform your prose with Newspeak

various shareware utilities and diversions.

Anyway, I'm moving on — not so much to pastures new, as to a field not far away. Business will continue as usual in the Windows 95 column, but as from next month you'll find this one in the capable hands of Panicos Georghiades and Gabriel

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## Tim's top twelve favourites

And so, to tips. We've had hundreds over the past three and a half years — both from my own investigations and your feedback. So here is my all-time favourite dozen.

**1. Starting Windows** Change the Windows start-up screen by creating a bitmap (no more than 16 colours or 50Kb) in RLE format — say, newlogo.rle. You'll need something better than Paintbrush; Paint Shop Pro does the job well. Make a back-up of WIN.COM, quit Windows, and from the command prompt in Windows\System type:

```
copy /b win.cnf+vgalogo.lgo+newlogo.rle c:\windows\win.com
```

adjusting paths to suit. If you want an easier way, back up the existing VGALOGO.RLE and save the new file over the original. Use Windows Setup (again from DOS) to change any aspect of the Windows configuration. This rebuilds WIN.COM, automatically. Now run Setup again to change it back; the new screen will stay in WIN.COM.

**2. Screensavers** To run a screensaver on demand, first edit WIN.INI and add "SCR" to the line PROGRAMS=COM EXE BAT PIF. Then create an icon for the screensaver module with, for example, the command line "MYSAVER.SCR /s".

**3. What the .DLL?** You can often find out more about a system file (like a .DLL, .DRV or .EXE) from File Manager's "File/Properties...". Alt + Enter is the keyboard shortcut.

**4. File and Program Managers** Once you have the windows and icons arranged the way you want them, press Alt + Shift + F4 to save the settings. Don't forget to turn off "Save settings on exit" to stop this being overwritten.

**5. Program Manager** You can restrict users of a PC (providing they don't know this trick) by editing PROGRAM.MAN.INI and adding a [Restrictions] section containing the following:

- EditLevel= 1 — can't create, delete or rename groups; = 2 — nor program items; = 3 — as 2, plus can't edit item command line; = 4 — can't make any change to groups or items.

- NoRun=1 — disables the File/Run... command.

- NoFileMenu=1 — removes the entire "File" menu.

- NoSaveSettings=1 — can't save settings.

- NoClose=1 — can't close Program Manager.

**6. Control Panel** Control Panel can be similarly restricted: add a [don't load] section containing the items you want to restrict. For example:

- fonts=1      ● desktop=1      ● drivers=1

Note that the right-hand side of the equation can be anything you like; "0" or "gerbil" will work just as well.

**7. Screenshots** Grab your own. The Print Screen key copies a screen image to the clipboard. Alt + Print screen copies the current window or dialogue box. You can paste these into any bitmap program (including Paintbrush) edit, and save them as files.

**8. DOS commands** For quick help on most DOS commands, type the command followed by "?". For more information type "help command".

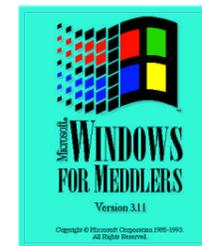
**9. Editing System files** There's a little-known utility, called SYSEDIT.EXE, which should be in your Windows\System directory. It loads AUTOEXEC.BAT, CONFIG.SYS, WIN.INI and SYSTEM.INI (plus others if you're mail-enabled) for editing and automatically makes backups with the .SYD extension.

**10. Your Program Manager** Silly, but it works. Create an icon for PROGRAM.MAN.EXE itself in a Program Manager (PM) group. In the "Description" box type what you will. Launch it and you'll change PM's title to your chosen description. Stick it in the StartUp group, and it will be there to greet you when you switch on.

**11. Control Panel** If you need quick and frequent access to a Control Panel item, cut out the middle man by creating items in Program Manager. "CONTROL.EXE MAIN.CPL FONTS" as a command line, for instance, will jump straight to the Fonts section without loading the rest of Control Panel. For an added touch of class, dig out the relevant icon by browsing the .CPL file.

**12. Fax Modems** It's a pain when you have to close Fax receive standby software to launch a comms session. And even more of a pain when you forget to launch it again afterwards? Try setting up two COM ports (say, 2 and 3) from Control Panel/Ports/Advanced. Set them both to the IRQ and address used by the modem. Point the fax software at COM2 and the comms software at COM3. It fools my system, anyway.

Jacobs. The Lennon and McCartney of computer journalism, they should need no introduction to regular readers of PCW, but I'm giving them one anyway as I can't resist playing master of ceremonies.



## Oh, goodie...

We've seen weird and wonderful shareware and freeware over the past three and a half years. There was the Windows Non-Productivity Pack which contained essential desktop utilities such as the Virtual Cigarette and Elvis Detector. There was Bubba, the picture-based Windows shell for those who found Microsoft Bob too difficult.

For my final 3.1 column, I've included something old, something new, and made an extra special effort to find the ultimate in bizarre shareware.

First, the old. One of the first diversions I ever found for Windows 3.0 was Mahjongg, which I had lost, until today, when I stumbled across it in a shareware collection. It's a patience game based on the Mahjongg tile set: the object being to match pairs and remove them from the board. The tiles are arranged in a complicated pile, and you can only remove those that have a free space to the left or right.

It's quite tricky, very pretty, and has

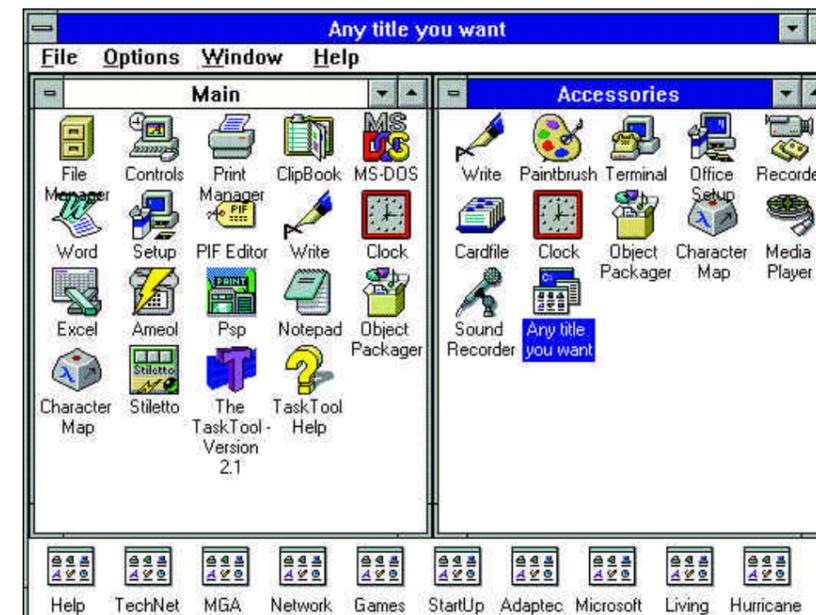
## Department of dishonour

Last month we found out how to cheat at Hearts. If you think that's sad, how about cheating at Solitaire?

■ Isn't it annoying when you've elected to turn over three cards at a time and you find yourself stuck with that vital card never making it to the top of the pile. Wouldn't it be nice to, just this once, turn over one card instead of three?

First, make sure no-one is looking. Second, hold down Shift + Alt + Ctrl as you click the deck, which will turn over just one card. Third, wallow in guilt, and if you've never, ever, won a game of Solitaire, persevere as there's a surprise in store.

■ Oh, and just to complete the set, here's the cheat for Minesweeper. Type "xyzy". Hold down Shift as you wait the pointer around. Watch the top left pixel of the screen — yes, that's the whole screen, not the Minesweeper window. When you're on a safe square, it will light up (set your Desktop to a dark colour to see this better).



**Aboveleft** Roll your own Startup screen

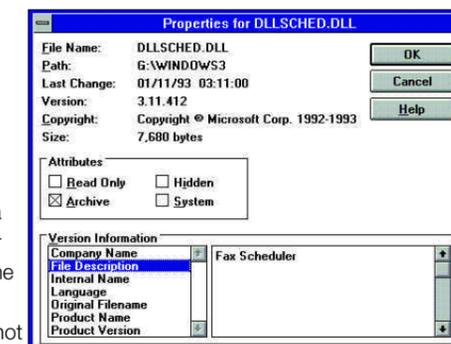
**Above** Adding a personal touch to Program Manager

loads of different tile sets. If you have a paint program that can save 16-colour .PCX files, you can create tiles using the supplied template and DOS utility. I'm convinced it's a major contribution to not getting any work done. You'll find MJWIN.ZIP on this month's cover-mounted CD-ROM.

A more recent, and considerably weirder offering, is Kevin Solway's Newspeak. This takes input from a plain text-with-linebreaks file and gives you the choice of converting it either to elegant old English or a politically correct version — or, to use the latter form, "experientially enhanced" or "culturally sensitive". On balance, feeding it bits of this very column, I think I preferred the former: "Thee'll needeth something better than Paintbrush — Paint Shop Pro doth the job. Amen!" has a rather fine ring to it that my usual prose lacks.

In PC mode, it not only replaces such howlers in the text as "short" or "animals" (with "vertically-challenged" and "non-human beings") but adds disclaimers such as "Of course, the above is only one of many different sides to this question" after every statement.

Do make sure that the line breaks are there, as I found Newspeak crashed without them. Most word processors will "Save as..." with line breaks but if you're



**Ah, that's what it is — getting information via File Manager's Properties**

using Notepad or Write you will have to put them in manually. The help file (which is actually twice the size of the program) contains several illuminating texts on the subject of political correctness which are both controversial and funny — although I wouldn't presume to cast doubt on the ideas anyone else has had on this issue.

■ As from next month, Panicos Georgiades and Gabriel Jacobs will be writing about Windows 3.1. Tim Nott will continue to contribute the Windows 95 column. And also from next month, you'll find him writing Hands On Word Processing, too.

## • PCW Contacts

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# Multiple mayhem

Multiple configuration options, low level Windows security, and the search for a cure for the dreaded RDS. All dealt with before Tim Nott posts his Christmas wishes up the chimney.

**M**artin deLoughery emailed me from Bahrain (he must be a devoted reader because *PCW* costs more than ten quid there) with a warning on multiple configurations, as discussed in my October '96 column.

He writes: *"I stopped using the DOS multiple configuration option thing aeons ago. Why? Well, the prime reason is that once you have set the whole thing up, would you be likely, thereafter, to never add another device to your system or do anything that will not require a change to either CONFIG or AUTOEXEC? I think not, and if you like your memory to be optimised (as I do) you will find that MEMMAKER and your nice new multiple-configuration CONFIG and AUTOEXEC will not be cheery bedfellows. Try running Memmaker with your config and autoexec setup for multiple configuration and see what happens."*

Certainly, he has a point. However, it should be possible to run MEMMAKER on each individual configuration, save the results as CONFIG and AUTOEXEC.001, 002, 003 and so on, and combine the results into a single, multi-choice CONFIG.SYS and AUTOEXEC.BAT. That's not to say I'd really like to try it, so point taken.

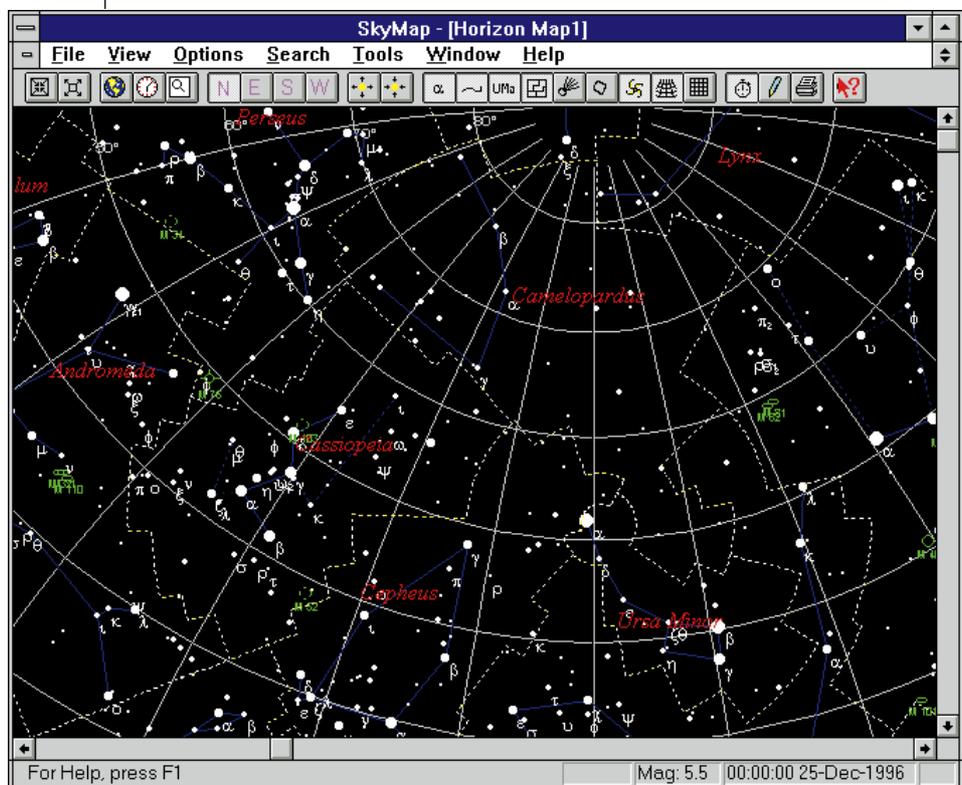
Another observation came from Tim David, who complained that he couldn't get more than nine menu choices, but I think he was just showing off.

## Stargazing

"We are all in the gutter, but some of us are looking at the stars." So wrote Oscar Wilde who, with remarkable prescience, also coined "Either that wallpaper goes or I do" shortly before his last and fatal GPF. But I digress.

As star watching seems appropriately seasonal, check out Chris Marriott's SkyMap on this month's cover-mounted CD. Chris, who comes from Culchet in Cheshire, has created a rather splendid planetarium for Windows. Tap in your latitude and longitude and you'll see not just stars in the east, west, south and north, but planets, asteroids, comets and deep sky objects. It's on the CD-ROM as Skymap.zip, which contains 16-bit and 32-bit versions. It's a 30-day shareware evaluation version. The full program shows over 250,000 objects.

■ Registration costs £29.95 (plus P&P and VAT) from the Thompson Partnership on 01889 564601.



A starry starry night from Chris Marriott's SkyMap, which is available on the PCW CD-ROM this month (Skymap.zip)

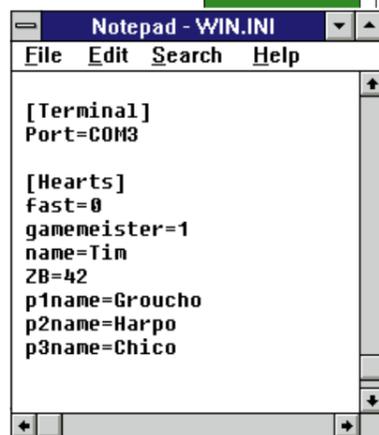
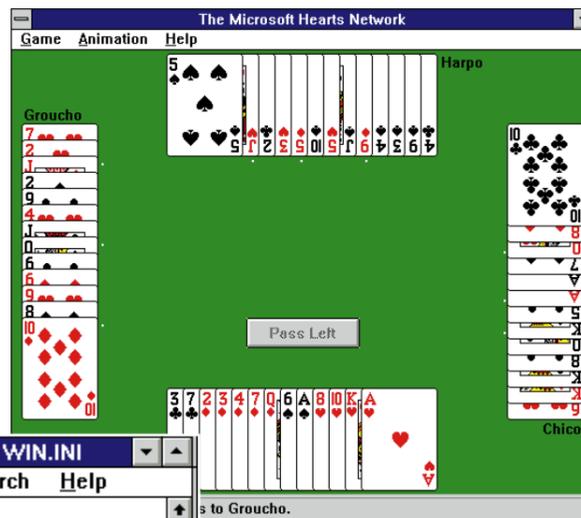
## If at first you don't succeed — cheat

If you're an honourable and upright citizen, skip this bit. Not to put too fine a point on it, this is how to cheat at Hearts.

Add ZB=42 to the [hearts] section of WIN.INI. (If you don't have a [hearts] section, create one including the square brackets.) Restart Windows. Play Hearts. Hit Ctrl+Alt+Shift+F12 — borrow some fingers if necessary — and watch as all your opponent's cards become visible.

But even having done that, I still find I lose — I don't really mind, but I do find it rather

humiliating to be consistently trounced by someone called Terri. So if you're in the same boat, cheer yourself up by changing the default opponent names (on a non-networked machine) by adding entries for p1name=, p2name=, p3name= to the section as well.



## Jerking around

On a more positive note, our man in Bahrain has a rather novel use for CHOICE.COM (Hands On Windows 3.1, July '96). Being forced to share a PC with somebody he uncharitably (but probably justifiably) refers to as "the jerk", he first created two directories, "Hisstuff" and "Mystuff", and copied his PROGMAN.INI and \*.GRP files into "Mystuff". He then created a custom Program Manager for the jerk, giving more limited access before copying this set of PROGMAN.INI and \*.GRP to "Hisstuff".

Using CHOICE with the /N and /T switches to suppress the prompt and timeout to a default, AUTOEXEC.BAT would always copy the jerk's Program Manager settings to Windows, unless he pressed a certain key (but unknown to him) during the crucial few second's pause. "It never

mattered" writes Martin, "what he did to his program groups (lest he should have learned how) and never mattered whether 'Save settings on exit' was turned on, the jerk always got the same screen every time he started Windows. Crude, but at that level, effective security."

Roger Pearson had a problem with Program Manager. It could be minimised or maximised but when restored "...it appears as just a short title bar, and I cannot change its size or position from the top left corner of the screen. I have printed out all the obvious files but cannot find any differences between this machine and another."

This sounds very much as if PROGMAN.INI has been nobbled. Open it in Notepad and you should see a section headed [Settings]. In this will be a key named Window= followed by five numbers.

The first two give the position, in pixels, of the top left corner of the window. The next two give the size, again in pixels, and the last should be 1 for restored, 2 for minimised and 3 for maximised. When you restore Program Manager from either minimised or maximised, it will return to the position and size determined by the first four numbers. If these are unfeasible, you can get the problem Roger describes.

The simplest solution is to delete the entire line, or comment it out by putting a semicolon in front. Program Manager will then resort to something restored sensibly in the middle of the screen.

## Recursive Syndrome update

A problem that's proving very popular is the mysterious Recursive Directory Syndrome (RDS), as reported in this column in November. This is where Norman Burnell reported that the contents of C:\GAMES was replicated in C:\GAMES\GAMES and so on *ad nauseum*.

A Mr (or Ms) Butterwick reported: "I also had RDS, along with other things such as not reading a file that it had just verified as being saved, files not existing which File Manager or a DIR reading had shown to be in perfect condition, and CHKDSK reporting thousands of lost clusters or cross-linked files. After numerous checks and tests, it finally turned out to be a faulty motherboard — wish I'd thought of that before trashing a perfectly good hard disk."

Colin Mower had a similar problem, although "...it only existed when I tried to open up my CD-ROM drive in File Manager when there was no CD in the drive. I would get thousands of directories reported as existing on an empty drive! This caused no problems in the running of Windows or DOS, until I tried to back up my hard disk. MSBackup would try and read all of these 'ghost' directories, and complain rather bitterly after about the 200th empty one. I tried everything to resolve this problem, but the only way I got out of it was to re-format my hard disk and start from scratch."

Chris Paget came up with a way of reproducing the problem. "All it takes is ten seconds with Diskedit or an equivalent. Having run Diskedit, go to the root directory, pick a sub-directory and change the cluster number to zero. When you quit, that sub-dir will now point back to the root, and voila! a recursive sub-directory, exactly as described." Unfortunately, he doesn't tell us how to reverse the process. Not having

## Dear Santa...



And so to my Christmas wish list. Last year, one moan was directed at multimedia applications which insist you change screen resolution before running. So hats off to Talking Books and Broderbund whose children's titles do this automatically, without having to restart Windows, and then neatly change it all back on exit — but only under Windows 95, alas. However, under 3.1 the titles will run without changing resolution. Likewise, in response to another moan, there's a refreshing trend for games and entertainment CD-ROMs to copy nothing but an icon to the hard disk.

Another wish (which made the charts two years running) was that memory prices would drop in accordance with other PC components such as processors and hard drives. I'm delighted (well, not that delighted, as I bought all my current memory before the drop) that this has come true, and after two years of £20-plus, a megabyte of RAM is, at the time of writing, less than £5 although it seems to be creeping up again.

A third wish that came true (or very nearly so) was for a UK version of Encarta. I've had to settle for a "World English" edition but this does a great deal to redress the over-emphasis on US sport, natural history and culture in favour of more important things such as cricket, nightingales and the Archers. And yes, it runs under both 3.1 and 95, but just to show you can't win them all, it installs 4.5-11Mb of files to your hard disk.

Another wish was for a superfast and stable video card. And I think I've found one — a Matrox Millenium that provides 16.7 million colours in up to 1,280 x 1,024 resolution. It seems solid as a rock and, something that's been on my wish list for a long time, lets you change resolution and screen depth without restarting Windows. And that's not just 95 but 3.1, too. And it's fast. In fact, it's too fast, as selecting or dragging text in Word is impossible if the startpoint and endpoint aren't on-screen at the same time: everything scrolls far faster than I can react.

And so to this year's wishes...

1. Can I have an option to slow down scrolling in Word 6 (and 7) please, so I can get my dragging and dropping back under control?
2. Can I ask printer manufacturers to take a rest from developing? I keep reading of colour inkjets that get ever better and ever cheaper. But just when I've set my heart on replacing my six-year-old (but still going strong) Star dot-matrix with the latest technological marvel from Hewlett-Packard (for instance), Epson, Canon or Lexmark — to name but four at random — move the goal posts. And by the time I've found the definitive best buy from that lot, guess what? HP has moved them back again.
3. But if I've really got to force a decision, then can I have an HP 690c, please. And could I possibly have it a bit early so I can produce those amazingly original Christmas cards I've been meaning to do for the past five years?
4. And while we're in an artistic vein I'd like one of those dinky little Artpad graphics tablets with the cordless pen, from Wacom. I had an all-too-brief loan of one and fell deeply in love.
5. Last but not least, a repeat of last year's wish. Keep developing for Windows 3.1!



Tumpty-tumpty-tum...  
discovers the true meaning of culture

Diskedit or a spare PC to hand, I managed to resist the temptation to try this out. This one, I feel, will run and run, but hopefully we might find a solution.

## PCW Contacts

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# The **error** of our ways

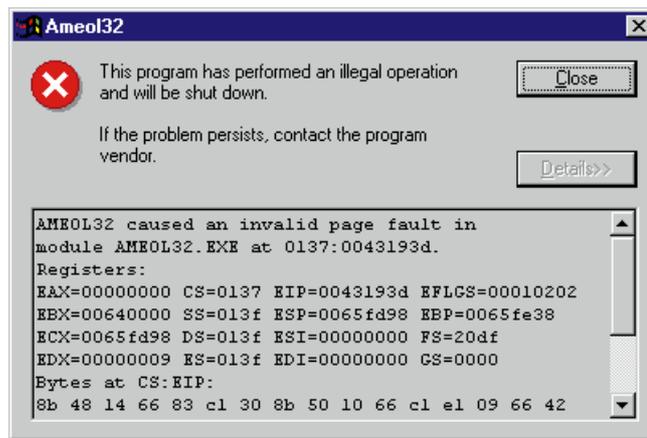
Tim Nott dives into the murky waters of the UAE, fishes out the most common error messages and shows how to deal with them.

**S**ome 2,400 years ago, Euripides proclaimed: "Those the gods wish to destroy, they first make mad." Were he alive today, he'd probably amend that to "first send error messages" as he watched the first draft of the Orestes vanish into digital oblivion as his word processor collapsed in a Windows GPF. So here follows a not-entirely-serious look at the subject of error messages, what they mean and what to do about them.

The doyen of them all is the UAE: not the United Arab Emirates but Unrecoverable Application Error. This is a throwback to Windows 3.0 days.

The world's biggest UAE occurred at the Hippodrome, Leicester Square in January 1991 at the public launch of Excel 3. Some say it was tempting fate to have the Microsoft UK managing director, David Svendsen, wafting through dry ice in a ballroom at ten o'clock in the morning before a packed audience of eager businessmen and women. Others blame the enormous display screen used for the ensuing demonstration. In any event, the presentation team were adequately prepared and, when the unthinkable happened, were able to continue the demonstration on another well-known, and apparently more stable, software platform.

UAEs could be caused by anything from errant applications to wallpaper that was exactly 1,024 X 768 pixels. As Windows 3.0 matured into Windows 3.1, the UAE matured into the GPF, or General Protection Fault, that we know and love today. This is an example of chaos theory in action and can be caused by anything ranging from an incorrect hardware setup to the wrong type of butterfly beating its wings on Mount Fuji.



**Fig 1 (left)** Funny, it was working this morning — but Win95 users get GPFs, too

**Fig 2 (middle)** The not-very-helpful message

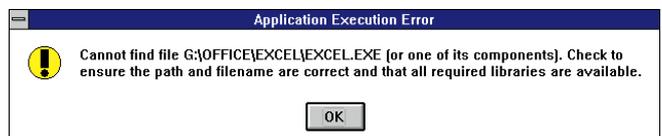
**Fig 3 (bottom)** Better, but it's probably a DLL, not the EXE

What it means is that an application has written, or attempted to write, to an area of memory already in use by Windows.

A really good GPF can spread like an instant plague. Even if the offending application is closed, others will spring their own GPFs in a merry round of "Atishoo, atishoo, we all fall down".

There are two slim hopes. One is to click the Ignore button if you're given the chance and hope that the problem goes away for long enough to allow you to save your work. You may have to do this several times, so don't give up if the error message returns after the first click.

The other chance is to press Control + Alt + Del to force a "local reboot". You'll get the blue screen of death with instructions to close the offending application and return to Windows. Sometimes, this actually works.



Although GPFs still occur under Windows 95 (Fig 1), personal experience has shown them to be less frequent and you stand a better chance of recovery.

■ "Cannot find the specified file or one of its components" (Figs 2 & 3) leaves it up to you to guess which component, as it probably isn't going to tell you. The most likely cause is that a DLL has gone AWOL. A Dynamic Linked Library is a central collection of routines that can be accessed from Windows applications. These cover everything from File Open/Save dialogues, OLE to bits needed for all those shareware

p264 >

Visual Basic applications. One tip here is to try opening the program in a different way: try the Program Manager icon, the File Manager .EXE and an associated data file. One of these may be kind enough to mention the missing DLL.

■ **“Call to undefined dynalink”.** The application is looking for a routine in a DLL... It's found the DLL (hooray!) but not the routine (boo!). Almost certainly, one of your DLLs has been overwritten with an older version. A variation on this is that there are two versions of the DLL on your disk and Windows is finding the older one first. This happens, for instance, with the

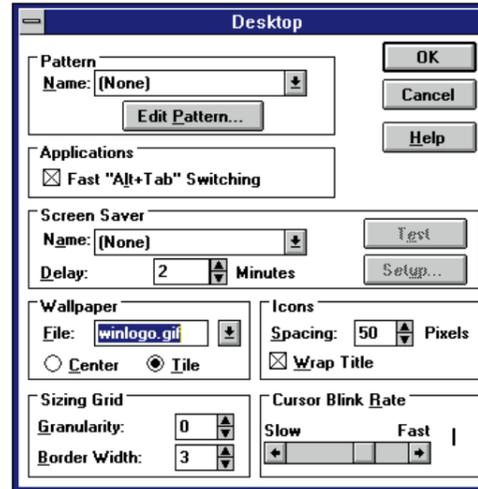


Fig 4 (above) Mission impossible: this will earn you an “out of memory” error



Fig 5 (left) It could mean anything, but I made this one by renaming calc.exe to talc.exe and saving it from Notepad...



Fig 6 (left, bottom) ...and this one means you've got too many icons in high colour depth

Windows 3.1 Dr Watson and TOOLHELP.DLL. Old versions of SHELL.DLL, COMMDLG.DLL and the various OLE DLLs can also cause this problem. If there are duplicates in WINDOWS and WINDOWS\SYSTEM, remove the older versions and make sure the newer ones are in WINDOWS\SYSTEM. ■ **“This application has violated system integrity and will be shut down”.** This headmasterly pronouncement is the equivalent of being caught with a packet of B&H fags behind the bike sheds and accused of trying to burn the school down. It's usually caused by an errant DOS application, but an interesting variation is that it can happen if the processing of an MS LAN Manager script takes longer than the allotted thirty seconds.

There's nothing you can do but follow the instructions to save everything else, restart the PC and run the application from plain DOS next time. If a Windows application produces this, it's probably been at something stronger than B&H which has corrupted the .EXE, so reinstall. ■ **“Cannot read from drive X:”** Oh dear, this could mean that your hard/floppy/

### Readers' write

Two neat DOS tricks from Steven Nicolaou of Nicosia. First, to find out the number of lines in a text file, use the FIND command with the /V and /C switches and a string of gibberish. For example:

```
FIND /V /C "zzyyxyy"
c:\wherever\myfile.txt
This will return the number of lines not containing "zzyyxyy" which in most texts will be all of them. If "zzyyxyy" is a word you use a lot, modify it to suit.
The second is using wildcards in the REN (rename) command. REN ABC?.BAT CBA?.BAT will rename ABC1.BAT, ABC2.BAT and ABCD.BAT (for example) to CBA1.BAT, CBA2.BAT and CBAD.BAT
```

CD-ROM drive is up the swanny. Or it could mean a loose cable. If it happens in a DOS box, it might just mean that the file DOSAPP.INI is corrupt. This retains a list of settings for Windowed DOS sessions: you can delete it and Windows will recreate it.

■ **“Insufficient memory to complete operation”** (or variations) — (Figs 4, 5 & 6). This one could mean anything. Word for Windows 2 used it as a default error message. Control Panel uses it if you try to

specify a wallpaper file that is not in the .BMP or .RLE format. It can also arise if you've loaded an .EXE file into Notepad, saved it and tried to run it. But you wouldn't do anything quite so daft, would you? Probably the most common cause is Windows running low on resources, like the 64Kb of memory that stores things such as icons, control buttons, cursors and other odds and ends.

Check the About box from any Help menu. If resources are below 20 percent, trouble is looming (see Figs 7 & 8). When they get really low, TrueType displays in the system font and things like buttons and scroll bars disappear. The obvious antidote is to close some applications: heavyweight office suites are the prime offenders. However, some applications leak resources and don't give them all back to the operating system when closed. Save everything and restart Windows.

A related problem is the black icons mentioned in the October column. If you have a high colour depth display and more than around 16 icons in a Program Manager group, you'll get an Out of Memory error if you try to add more icons.

A more obscure variation is that you are

low on the first 640Kb of DOS memory. Every Windows application needs a tiny slice of this, but some are far more greedy. I've found mail and fax software to be particularly so. To get the lowdown on this area of memory, use Matt Pietrik's Fix1Mb, included on this month's cover-mounted CD-ROM (Fix1mb.zip). It could mean just what it says, which is that you are out of common-or-garden global memory. Buy, or at least clear, some hard disk space and defrag to create a bigger swap file.

■ **“Bad or missing command interpreter”** (DOS message). If you get this after quitting Windows, the chances are you've deleted or corrupted COMMAND.COM. First of all, you are going to have to reboot from a

### Ten top tips

Last month it was Program Manager. This month it's the turn of File Manager.

1. Hold down the Control key to select multiple files individually.
2. Hold down the Shift key to select everything between two files. (These two tips also work with some dialogue boxes: e.g. adding fonts in Control Panel.)
3. Single click on a drive icon to change the current window to that drive. Double-click to open a new one. Ctrl + Letter also switches drives.
4. Shift + double-click on a directory symbol to open a new window on its contents.
5. Alt + Shift + F4 saves the current arrangement and settings. “Options/Save settings on exit” will override this, so turn it off if you want File Manager to keep your carefully crafted arrangement.
6. Don't save settings, either way, with a window open on a floppy or CD-ROM drive. Next time you open it, it will grind away for a long time before realising the drive is empty.
7. Control + F4 closes the current window.
8. F5 refreshes the contents of the window.
9. Shift + F4 tiles Windows side by side.
10. If you're looking for a file in a large directory, click in the right-hand pane and type the first letter of the filename. The highlight will cycle through all the files starting with that letter.

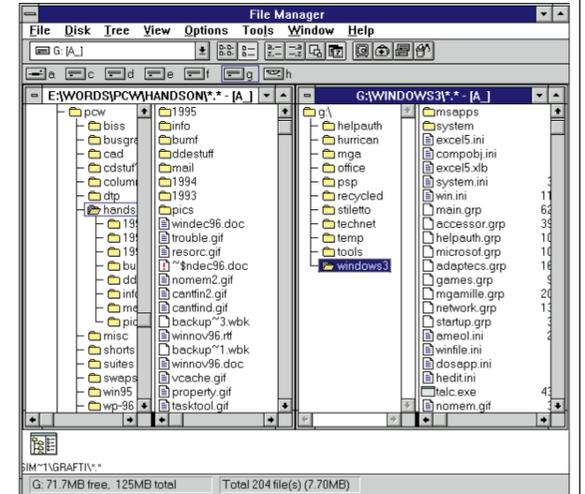


Fig 9 This month's star turn tip is File Manager

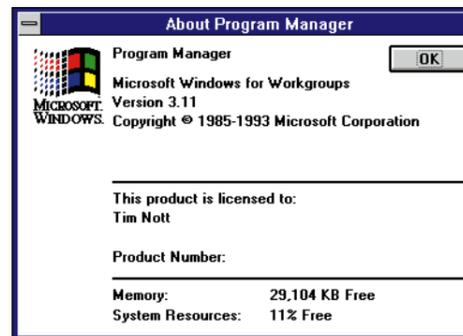


Fig 7 (left) Resources down to 11 percent means trouble is on the way...

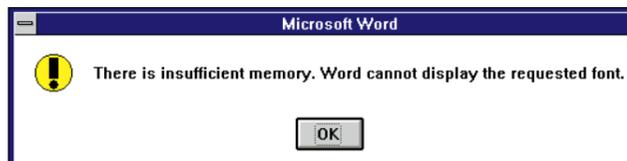


Fig 8 (below) ...and sure enough, here it comes

in AUTOEXEC.BAT, run PIFEDIT, load DOSPRMPT.PIF and check that it points to the same location. If not, it should normally point to C:\.

Another possibility, especially if the error message occurs repeatedly, is that the SHELL command is being used without the /p switch. This causes COMMAND.COM to unload itself, given the chance. The /p switch should follow the path: SHELL=C:\DOS\COMMAND.COM/p.

### Squeaky speaky

If you're tired of being the only kid on the block without a sound card, then take heart. It is possible to use the built-in speaker on your PC to play .WAV but not .MID files. Quality will depend on the nature of the speaker in the PC but it will probably be more whimper and squeak than Bang and Olufsen. Look on the CD for SPEAK.EXE which is a self-extracting file. It's old but it works, even in Windows 95.

### PCW Contacts

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# Weird and Windowful

Tim Nott turns agony uncle to tackle a strange DOS problem, smartdrive and vanishing Windows worries. There are ten top tricks to teach an old dog, plus two treats on our CD.

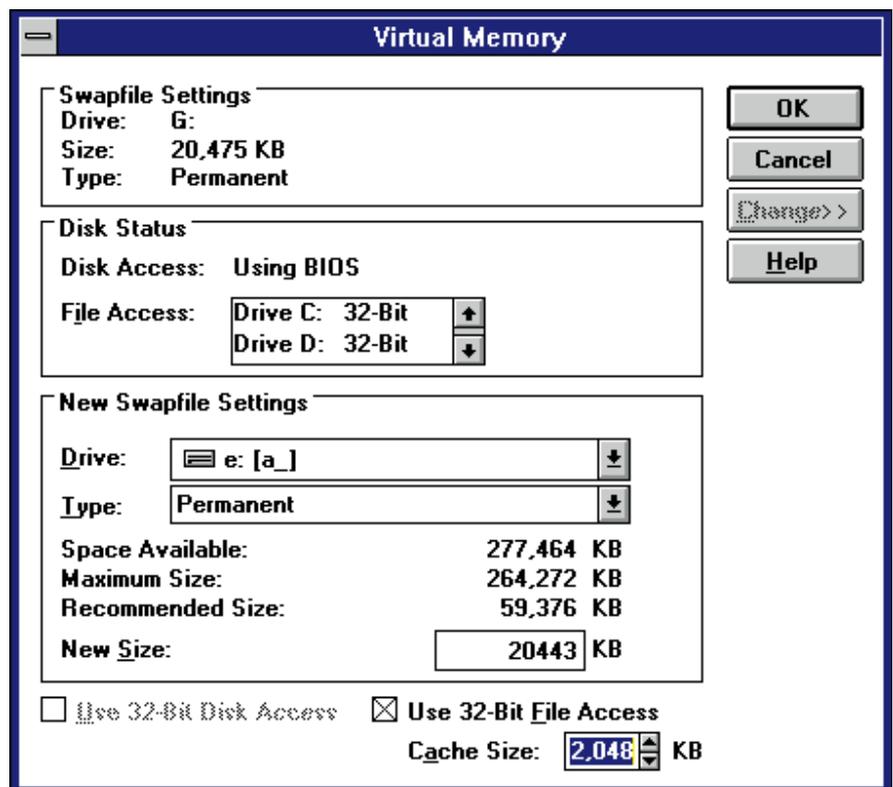
**N**orman Burnell wrote from Cheshire with one of the weirdest problems I've heard for a long time. Something had gone wrong with a DOS game (so, nothing new there) on a friend's PC. Using Dosshell revealed a path which went:

```
C:\games\games\games\games\games\
games\...
```

and so on, until Dosshell ran out of memory some 6,000 directories later. Moving to Windows File Manager, it got stranger still: the contents of C:\games\ were a replica of the contents of C:\ as were the contents of C:\games\games\, C:\games\games\games\ and so on. Another directory (C:\mp2\ ) behaved in the same bizarre, recursive, fashion.

Norman tried deleting some of the surplus directories. "Too late I realised that ample disk space indicated the number of files was not a problem and it was the directory structure that was haywire. I had already cautiously (or so I thought) tried deleting one of the sub games directories, only to find that these apparent duplications were the real thing, hence DOS and Windows were among those that were no more."

The vital clue that he'd missed wasn't what was going *wrong*, but what was going *right*. If Windows was still loading, then the damage couldn't have been too severe. I searched the Microsoft Knowledge base for similar reports but unsuccessfully. I can only guess that there was an error in the disk directory structure which was responsible for the problem. Scandisk (or Chkdsk in earlier versions of MS-DOS) should be able to fix this automatically. It's certainly worth a try before deleting the lot and reinstalling. As to how it happened, I have no idea, but



**Fig 1** You need to set up Windows 3.11 32-bit file access from Control Panel. It isn't automatic

as ever in the mysterious happenings stakes, checking with an up-to-date virus detector is always a good idea.

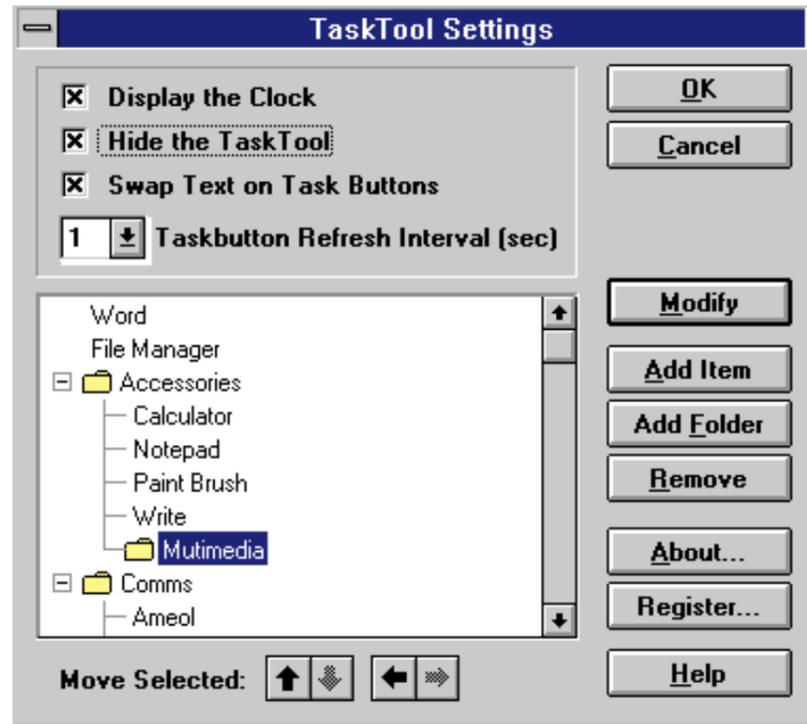
### Get smart...

Roger Caton, of Bradford, writes: "I have Windows for Workgroups 3.11 installed, I've enabled 32-bit file access and I'm told that I no longer need Smartdrive. However, the line C:\WINDOWS\SMARTDRV.EXE 2048 128 still appears in my AUTOEXEC.BAT file. Has Windows fouled up?"

Roger is right, but so is Windows. To explain briefly, Smartdrive is a disk cache.

That is, an area of memory that acts as a holding area for disk data. If it thinks the same data is likely to be read again, it stores it. Memory access is much faster than disk access, so performance is enhanced. Similarly, disk writes are held in the cache until it is "flushed" and all outstanding data written to disk. With Windows 3.11 came 32-bit file access and VCache (Fig 1), which replaces (and outperforms) Smartdrive when Windows is running.

The line in Roger's AUTOEXEC.BAT contains two numbers. The first is the size (in kilobytes) of the cache under DOS. If you



**Fig 2 (above) Setting up**  
TaskTool's cascading start menus — just like Windows 95

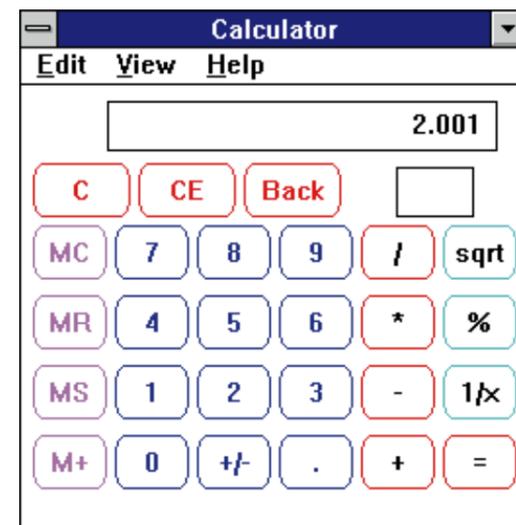
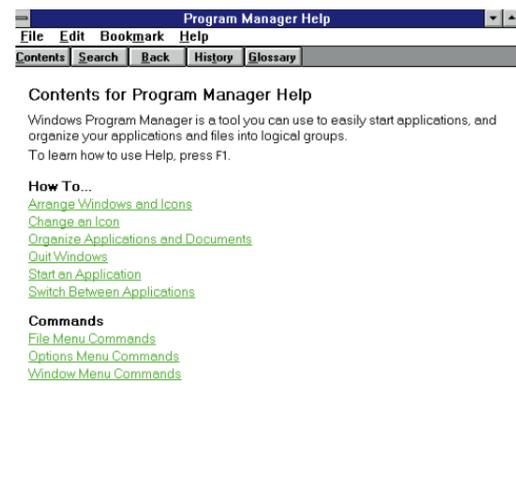
**Fig 3 (right) Default values for**  
positioning the Help screen are defined in the Win.ini file

**Fig 4 (below, right) Various**  
bugs on the Windows 3.x calculator have been fixed.

Check out our cover CD for the new version

use any DOS applications, especially disk-intensive items such as databases, you still need this. The second figure shows the size of the cache under Windows, in this case a modest 128Kb. So why have it at all? The answer is that VCACHE doesn't work on floppy drives or CD-ROMs, so you'll find that even with this small cache, floppy access is much improved. Note that in order to cache CD-ROMs, the MSCDEX.EXE entry should appear before the SMARTDRV.EXE entry.

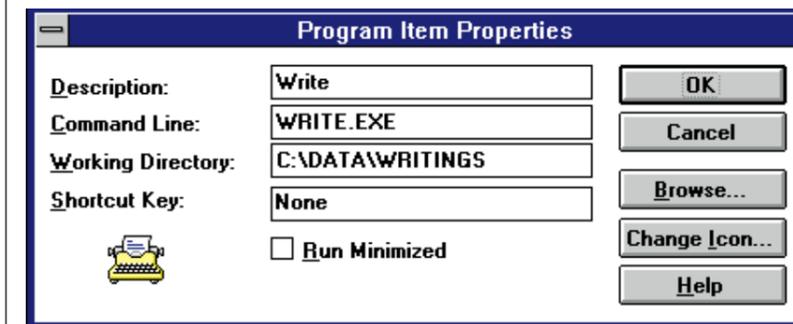
**Where are they now? part II**  
Further to last month's "DIY" session on how to find missing bits of Windows,



### Ten Program Manager tips

Despite the alternatives, the old dog can still get up to a few tricks. Here is my top ten, collected from various *Hands On Windows* columns over the last three years.

1. You can change the starting directory of programs. For example if you store Write documents in C:\data\writings, select the Write icon, go to File/Properties... (or press Alt+Enter) and enter this path in the Working Directory box. When you Open or Save As... you'll be in the target directory without having to traipse up and down the tree.
2. Further to the above tip, you can have multiple entries for the same program pointing to different working directories.
3. Icons use Resources — don't try to install more than 40 items per group and keep as few groups open as possible.
4. A related problem is that in 16-bit or 24-bit colour the limit decreases drastically. You'll get "out of memory" errors and solid black squares instead of icons.
5. For keyboard fans, Control + Tab switches between groups, Enter restores a minimised group or launches an item and the arrow keys move between items.
6. You don't have to use the icon that comes with the program. Hit the Change Icon button in File Properties and browse through .EXE and .DLL files. There's a good range of spares in Progman.exe and some tailor-made for DOS programs in Moricons.dll.
7. You can drag files from File Manager and drop them into Program Manager to create icons for programs or associated files.
8. If you've tidied up Program Manager and want to keep it that way, press Alt + Shift + F4 to save the current settings. Turn off "Options/Save settings on exit" to stop this being overwritten when you close down.
9. You can change the horizontal spacing between icons from Control Panel/Desktop, but to change the vertical spacing you need to add IconVerticalSpacing=nn to the [Desktop] section of WIN.INI, where nn is the number of pixels. Setting this to 50 gives room for just one line of text...
10. ...so from File/Properties..., edit the Description of long-winded programs such as *The Universal Widget for Windows version 3.3* to something more succinct.



You can start a program in any directory you choose and change the icon

another component prone to doing a vanishing act is Windows Help (Fig 3) and this is usually because it has been moved off-screen.

The quick and ruthless approach is to open WIN.INI and delete the [Windows Help] section entirely. It will be rebuilt with sensible default values next time you start up Windows. However, if you really want to show off, the entry M\_WindowPosition, followed by five figures gives the distance in pixels from screen left to window left, screen top to window top, width, height and a final 0 or 1 to signify windowed or

maximised. The copy, history and annotation windows have similar entries, starting with C, H and A.

#### A dodgy takeaway

As has been reported to this column, the Windows 3.x calculator is broken for all values of x. One, purely cosmetic, bug is that zeroes to the right of the decimal point don't appear in real time. Try entering 5.0005 and you'll see what I mean. Nothing appears after 5.0 until the final digit has been typed. A rather more serious problem is that it doesn't subtract very well: for

example, try 2.01 minus 2.

The good news is that (after four years) it has been fixed (Fig 4) although I don't believe the fixed version ever made it to the Windows installation disks. Anyway, you can find it on our cover-mounted CD-ROM, this month. Newcalc.exe is a self-extracting file containing the fixed calc.exe as well as a readme file.

#### Called to the bar

From something old to something new. Well, new to Windows 3.x users anyway. Another utility on our CD-ROM this month is TaskTool (Fig 2). Copy Ttool21.exe to a temporary directory and run it to install. It consists of a bar that sits at the bottom of the screen, containing buttons for each application running, a button to launch applications from a cascading menu, and a clock. If all that sounds familiar, yes, it's almost exactly like the Win95 Taskbar.

There's some nice attention to detail. Click on the clock button and the date pops up, the bar can be set to hide itself, reappearing when you move the mouse to the bottom of the screen and there's even an option to reverse the text on the buttons, so you see "Mydoc.wri - Write" instead of the other way around. This is especially useful when you have lots of windows open and the full title is too long for the button. You can tell the application from its leading icon, so its name isn't essential. Unlike Windows 95, this works with Microsoft Office. There's a Run command on the launcher menu, which, like its 95 counterpart, remembers a list of the most recently run commands. The launch button itself is titled Task Tool rather than Start, but works in a similar way — you can group programs into folders, rather like Program Manager groups except that they can be nested. About the only Windows 95 lookalike features you don't get is shortcuts to folders and the recent documents list.

The only faults I could find with it were that it caused a phantom bar to appear halfway up the screen (which went away when windows were resized), would only show the date in US mm/dd format and incorrectly reported the title of its own help file on the buttons. The version on the CD is a 30-day trial and registration is \$19.95.

#### PCW Contacts

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