NeXT on the agenda

Howard Oakley hopes that Apple will capitalise fully on its recent acquisition of NeXT, including giving priority attention to a new MacOS filing system. Plus, comms chaos.

I n recent years Apple has been more adept at delivering shocks than surprises, so it's a particular pleasure, when all eyes seemed turned towards Be, that we should hear of Apple's purchase of NeXT. While I am sure that Apple has clear plans for its latest acquisition, I am certain that those plans will prove as flexible as Copland, although hopefully it will unravel to a tighter schedule.
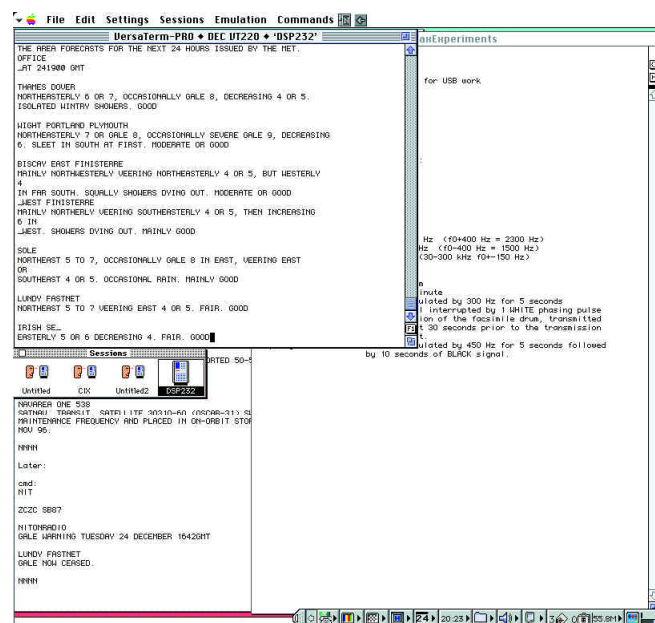
Whatever Apple does with NeXT, it seems sure that its combined products will be more exciting and that it will regain some of the initiative and leadership that has been on the wane. High on my wish list is a replacement filing system for MacOS, which will spare us having to patch up with Disk First Aid after each significant crash.

Just as Apple has managed to transform its implementation of Virtual Memory in System 7.5.5, so it should accord a high priority to the use of memory protection to minimise the consequence of crashes, too: that part of the Copland project (MacOS 8) also needs early introduction. And if the networking and security trappings which the NeXT team brings can turn a hybrid MacOS into a first-class operating system for corporates and the government sector, Apple's purchase will be money well spent.

Communication breakdown

Having cut my commercial programming teeth on a suite of applications to drive various bizarre devices through the Mac serial port, I tend to assume that ordinary communications can only be more simple.

If only this were so. This month's new hardware was not a conventional computer peripheral, but the ham radio equivalent of a modem (and more). AEA's DSP-232 is a peripheral of traditional and impressive
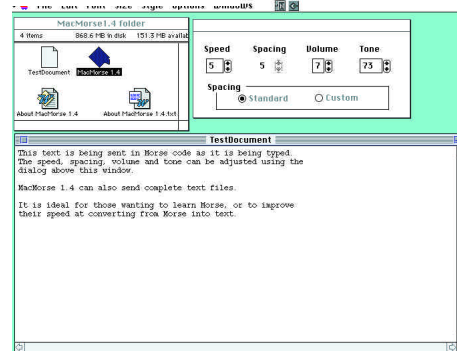

Left AEA's DSP-232 radio modem connected to VersaTerm Pro, showing a received Navtex weather forecast. An hour or so later the software crashed, leading to comms chaos

Below Although most amateur radio software seems to have been written for Windows or MSDOS, MacMorse's fine Morse tutor is an excellent learning tool

design: a black box with lots of flashing coloured lights, more convincing than a succession of faceless and unlit platinum peripherals. Instead of converting between digital data fit for the serial port and whistles down a phone line, the DSP-232 works with the far weirder sounds used in radio data transmission. These range from cicada chirruping to rhythmic grating, demanding far greater versatility in the electronics.

Rummaging through my confused knot of cables, I decided to use the 9-pin "D" (standard, newer PC serial port) to Mac 8-pin "DIN" (standard Mac serial port) cable provided with my new Olympus C-800L digital camera, connected to the 9-pin "D" to 9-pin "D" cable supplied with the DSP-232. With everything plumbed in, and the DSP-232 suitably fed with pops and crackles from an Icom R8500 communications receiver, I flashed up my

regular communications software, VersaTerm Pro. At this stage, my interest was in receiving and decoding Navtex messages which contain weather forecasts, navigational warnings and the other bread and butter of mariners. All you should need is a decent receiver, a DSP-232, and a plain text terminal program. But VersaTerm, having obliged dutifully for a couple of hours, suddenly froze the screen. I tried

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What goes where in your System Folder?

The only enforced rigour on your Mac's hard disk is in the System Folder. If you want your Mac to work properly and benefit from the full features of all your applications, you must ensure that all files and folders within the System Folder are correctly named and at the right level in the hierarchy. Most software now comes with an intelligent installer which puts each file in the appropriate place, but sometimes you will have to install things by hand. Your first recourse is to drop the file(s) onto the System Folder and allow it to sort out the proper location for each: mostly it works, but sometimes you will need to correct errors.

System Folder A-Z guide
■ [f] Apple Menu Items: desk accessories, applications and aliases to be accessed via entries in the Apple menu.
■ [f] Claris: if you have installed any Claris applications, contains dictionaries, the XTND file translator system, help files and other materials for those applications.
■ Clipboard: the last copied or cut item.
■ [f] Control Panels: items accessible via the Control Panel menu, which may contain extension code.
■ [f] Control Panels (Disabled): control panels which have been turned off using Extensions Manager.
■ [f] Control Strip Modules: will be added to the Control Strip.
■ [f] Desktop Printers: LaserWriter 8.4 and later printers shown on the desktop.

■ [f] Extensions: a whole mass of extensions, communications tools, and shared libraries.
■ [f] Extensions (Disabled): extensions which have been turned off using Extensions Manager.
■ Finder: the Finder itself.
■ [f] Fonts: installed fonts and PostScript fonts.
■ Hosts: definitions for TCP/IP connections.
■ [f] Launcher Items: aliases which appear in the Launcher.
■ MacsBug: a low-level debugger which can help you cope with crashes.
■ [f] Preferences: settings and preference files and folders for applications, although a few older ones still place their files in the System Folder itself.
■ [f] PrintMonitor Documents: documents being printed in the background.
■ Scrapbook File: the contents of your Scrapbook (in the Apple menu).
■ [f] Shutdown Items: aliases etc. to be run automatically before shutting down.
■ [f] Startup Items: aliases etc. to be started when your Mac starts up.
■ System: the System file itself.
■ System Updates: additions to the System file.
■ [f] System Extensions (Disabled): older extensions normally littered around in the System Folder itself, when turned off with Extensions Manager.
■ [f] Application-specific folders and files.
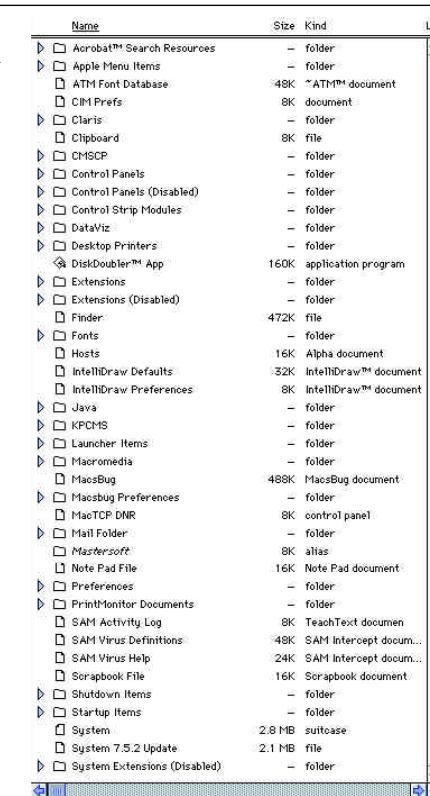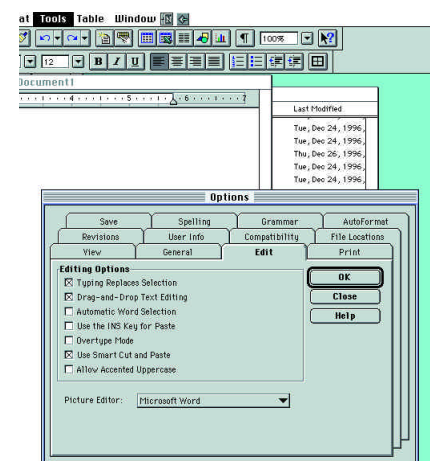*Note: [f] indicates that the item is a folder; others are files — see Fig 1 for icons.*

Fig 1 The System Folder contains a strict hierarchy of folders and files. When installing software, give the Finder a chance to put files in the right places, but correct any mistakes

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Black Night, a fancy shareware program which uses the same neat communications tools installed in the Extensions folder (in my

Thanks to Ian Cargill of Soliton Software for solving my longest-standing gripe with Microsoft Word 5: its apparent inability to allow you to select irregular parts of words. Use the Tools/Options… menu command to display Word's settings, pick the Edit tab panel and turn Automatic Word Selection off. It's as easy as that (just a bit of tricky navigation to get there)

case, the Serial tool for the connection, and Text or TTY tools for terminal emulation). But it, too, locked up. Taking a multimeter to the cable, it was clear that the Olympus adaptor was not wired to support hardware handshaking, which the software and DSP-232 were expecting to use. When you buy (or make) Mac serial cables, make sure that each one has the special RTS and CTS lines properly connected so you can use hardware handshaking if necessary.

Even when I used a correctly wired cable, or turned hardware handshaking off in favour of the weaker XON/XOFF software method, the crashes still occurred. Switching to VT220 and other tools only made things worse.

I then turned to ZTerm, a popular if vanilla-flavoured shareware comms application. Although the current version predates a proper release version of Open Transport, ZTerm wisely fights shy of the Communications Toolbox while apparently remaining totally compatible with Open Transport. When in plain text mode you can set it to ignore the eighth bit of received characters, and in this way it sat and scrolled its way through pages and pages

of Navtex, packet radio and the gibberish of noise, for hour after hour.

The lesson is that keeping it simple often keeps it stable. Because Apple has switched from the sophisticated but idiosyncratic Communications Toolbox to the sleeker Open Transport, older comms programs may be working through several layers of emulation (the 68K emulator on a Power Mac, and Open Transport's emulated support for tools) and with tools that were never completely debugged. Bring on the truly native Open Transport comms programs and all this should be a thing of the past, but they're not here just yet.