

# Acer TravelMate vs Hewlett-Packard Jornada 820e

**Which should you choose for mobile computing? We step out with CE Professional and Windows 95 sub-notebooks.**

Everyone knows that in the future, all computers will be mobile. But then, 20 years ago, everyone knew that we'd soon have domestic robots doing all the housework.

The fact is, current mobile-computing technology is still very much in its development phase and remains the poor relation to the desktop PC. There are some crucial areas of design which, rather than improving, are remaining static or even deteriorating as the inevitable compromises arise from trying to stuff computers with the equivalent power of a desktop machine into a case the size of a Fisher-Price toy.

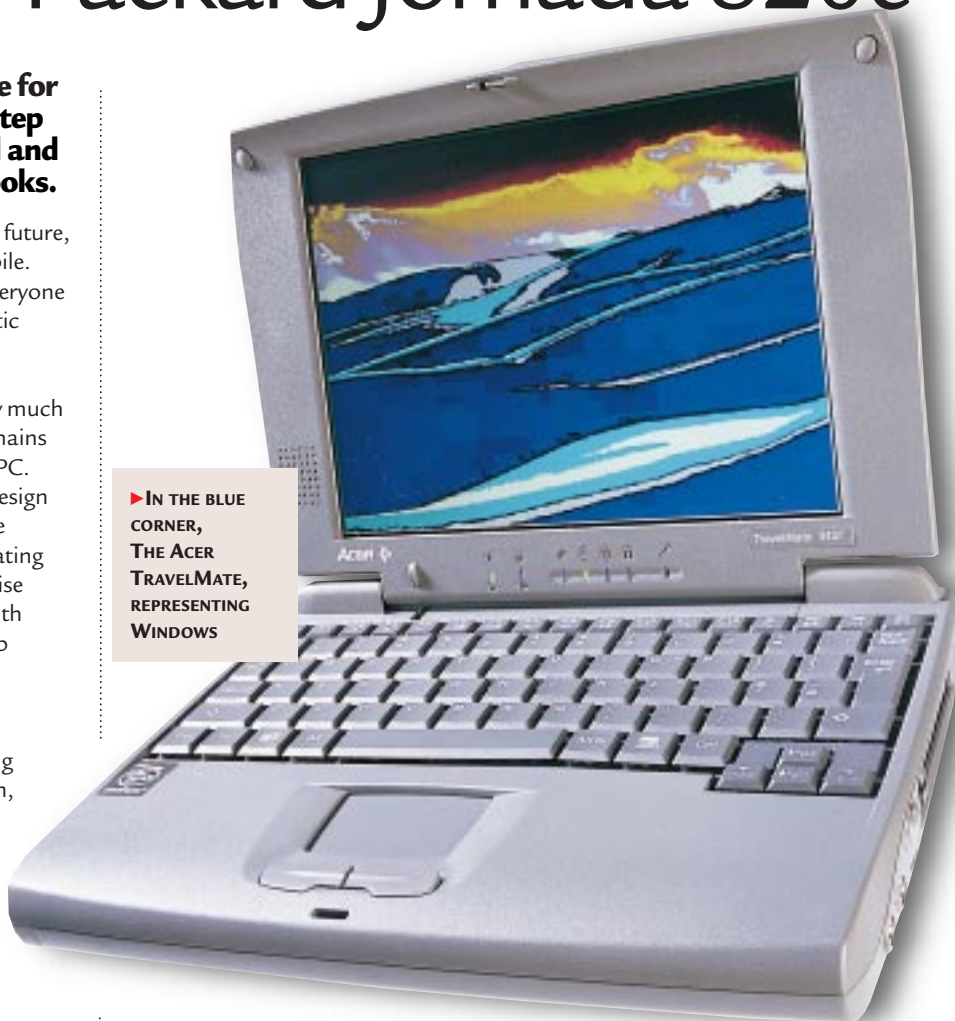
**Mobile computers** are not being developed from just one direction, though. On one side we have the prosaic top-down approach: notebooks and sub-notebooks with Pentium processors, hard drives and Windows 98. But on the other side we have the PDA (personal digital assistant). PDA designers tend to be pragmatists, focusing on designing small, convenient devices with the emphasis on ergonomics and reliability rather than

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ever-higher specifications to impress the punters into parting with their cash.

Windows CE is not the best example of this philosophy but it is at least the first version of Windows that doesn't need a hard drive. And the release of Windows CE Professional Edition (aka Jupiter) has given us a platform that has more of the features of a desktop OS but which also runs on devices with limited computing resources.

► IN THE BLUE CORNER, THE ACER TRAVELMATE, REPRESENTING WINDOWS



So, if you're looking to buy a mobile computer that's as portable as possible but does more than simply store your contacts' details, should you go for a Jupiter-based machine or plump for a full Windows 95/98 sub-notebook? We got our hands on Hewlett-Packard's

new Jupiter-based Jornada and compared it to Acer's rather neat TravelMate, a Windows 95 sub-notebook with a remarkably similar form factor.

## ► First impressions

We were struck by the machines' resemblance to each other. The TravelMate measures 235 x 175 x 38mm (WxDxH) when closed. The Jornada is 247 x 179 x 33mm and it's slightly

lighter at 1.185kg compared to the TravelMate's 1.345kg. Both units are similarly styled, with fairly rounded edges and a slight taper to the front of their cases. They both have integrated 56K modems, essential for keeping in touch while on the move.

From their internal specifications, the differences soon became obvious. The Jornada boasts an Intel StrongARM processor running at 190MHz and an 8.2in STN screen with a resolution of 640 x 480. It has 16Mb of RAM as standard, but no other storage.

The TravelMate has a mobile Pentium 233MMX processor, 32Mb of RAM and a 3.2Gb hard drive, and comes with an external floppy drive. The TravelMate 312T that Acer sent us had a better screen than the Jornada's, an 800 x 600 TFT. The 312T is rather more

## LAPTOP ERGONOMICS

**F**or most users, the primary factor affecting the usability of small machines like these is the keyboard. The form factor is plenty big enough to enable a decent layout, with the consequent benefits in comfort for reasonably prolonged use. This is where the Jornada scores its first big hit against the TravelMate, demonstrating the compromises which manufacturers must

concede in order to shoehorn a full Windows 95 machine into such a tiny box. Essentially, there's hardly any room left for anything else, so the keyboard is noticeably less spacious than the Jornada's. This is partly due to the TravelMate's case being 12mm narrower in the first place, but the keyboard is also almost 20mm shallower, front to back. Consequently, the keys are considerably smaller

and more crowded than the Jornada's, and tend to force you to type with your fingers perpendicular to the keyboard in order to avoid hitting more than one key at a time. This, in turn, can lead to hunched shoulders. By contrast, the extra area of the Jornada's keys means you can flatten your fingers and relax your shoulders, which leads to a more relaxed posture and less fatigue in the long run.

In real-world use, you'll probably get around two hours out of it. But the solid-state Jornada has a quoted life of ten hours and we managed around eight without difficulty.

**If you've never** used a notebook in anger, perhaps this doesn't seem so significant; eight hours isn't that much longer than two. But it's above the crucial threshold where you'll never manage to flatten the battery in one sitting. Anyone who has ever sat on the train, away from any mains power points, trying to work on a document, will know what we mean. The constant worry that you've got to work fast before your state-of-the-art mobile powerhouse becomes an inert lump of metal in your travel bag, is annoying and reduces productivity. You tend to spend as much time checking the battery's meter as you do thinking about your work.

With the Jornada, this is not an issue. You can work for a full day with no fear of the battery dying. And there's even a reasonable prospect that, should you not be in an area with the correct mains supply, you can survive for a week or so if all you're doing is

expensive than the Jornada, however, at around £1,400 (£1,199 ex VAT). The more comparable 312D model has a 640 x 480 DSTN display but is otherwise identical save for the exclusion of an external CD-ROM drive that the 312T has as standard. It costs around £940 (£800 ex VAT).

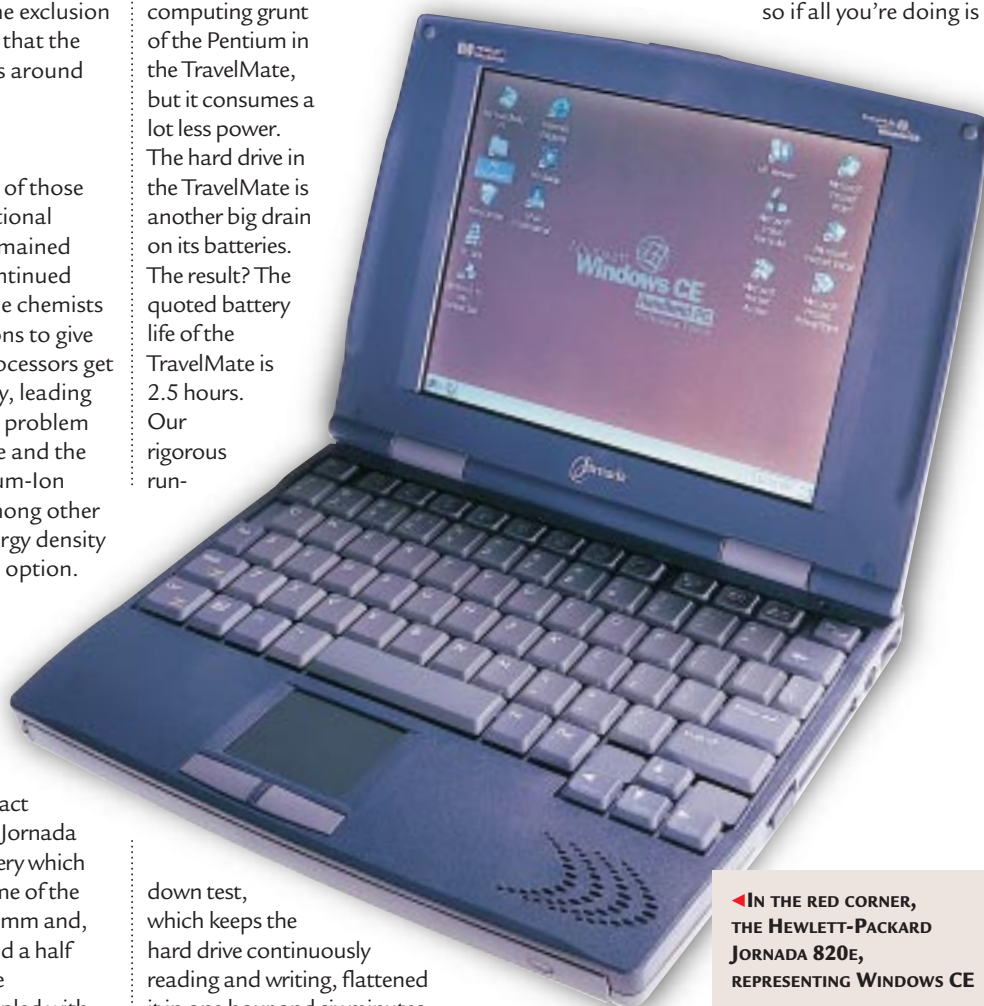
### ➤ Battery life

The issue of battery life is one of those areas which, as far as conventional notebook design goes, has remained pretty much static despite continued advances in technology. As the chemists come up with new formulations to give higher energy densities, so processors get faster and more power hungry, leading to stalemate. There's also the problem of space. Both the TravelMate and the Jornada sport the latest Lithium-Ion battery technology which, among other benefits, gives the highest energy density of any commercially available option. But after cramming in the processor, chipset, memory and hard drive, there's only enough space left in the TravelMate for a battery measuring 60 x 75 x 21mm.

By contrast, the lack of a hard drive and the more compact nature of the electronics in the Jornada leaves enough space for a battery which takes up nigh-on half the volume of the case. It measures 214 x 82 x 19mm and, in total, that's around three and a half times the battery volume of the TravelMate's power pack. Coupled with

this is the Jornada's PDA heritage, which means low power consumption. That StrongARM processor doesn't have the computing grunt of the Pentium in the TravelMate, but it consumes a lot less power. The hard drive in the TravelMate is another big drain on its batteries. The result? The quoted battery life of the TravelMate is 2.5 hours. Our rigorous run-

down test, which keeps the hard drive continuously reading and writing, flattened it in one hour and six minutes.



➤ IN THE RED CORNER, THE HEWLETT-PACKARD JORNADA 820E, REPRESENTING WINDOWS CE



checking your email once a day or taking notes in meetings.

Another important point to remember is that although the total battery life of the Jornada is around four times greater than the TravelMate's, you can do useful work for more than four times as long, thanks to the fact that the Jornada is an "instant on" device. The TravelMate's boot-up sequence takes around 40 seconds, and that's with a clean installation of Windows; after a couple of months, the nasty application garbage will build up and could double that. Even using the suspend option takes at least 30 seconds of precious battery juice, as the contents of memory is spooled to the hard drive.

If your usage patterns mean you regularly start your system up for short periods and then shut it back down again, you're wasting a significant portion of your battery's capacity.

#### Reliability

There's no doubt that modern electronics are highly dependable, even if the software that runs on them may be prone to frequent tantrums. But any engineer will tell you that for absolute maximum reliability, a system needs as few moving parts as possible.

The TravelMate has one large, relatively vulnerable, moving part — the hard-disk drive. Although modern mobile drives are highly resistant to abuse, they're still the most vulnerable part of the system if the unit is dropped. The heads of a hard drive literally fly above the surface of the disk, using the airflow to keep themselves at the correct distance above the platters. If the drive is knocked sharply while it's spinning (and it does need a very sharp knock), the heads can crash into the platters, pulling off flakes of magnetic coating which then fly around inside the drive and soon render it useless, destroying all your data.

The Jornada, being a solid state device, will suffer from none of these problems. There's a caveat here, though: the Jornada contains standard, volatile, RAM. In other words, if power is removed for any reason, all data is lost, so make sure that the two backup cells are replaced when the system indicates they're low.

#### Applications

Up until now, it looks like the Jornada has been having a pretty easy time of it. Better battery life, better keyboard, less moving parts to go wrong, and slightly cheaper, too. The TravelMate, however,

## JORNADA OR TRAVELMATE: WHICH IS THE ONE FOR YOU?

It's clear that although outwardly similar, these two machines, and the design philosophies they represent, have different target uses. As such, neither is better nor worse than the other. The Jornada's attributes mean that it's the answer to the prayers of many people fed up with increasingly faster processors when all they need is a

machine they can use to take notes, check their email or write the next chapter of their novel while sitting in the park. But the TravelMate will still be the choice of those who have neither the time nor the inclination to get used to a new bunch of applications with reduced features. And, you can always plug it in when the battery gets low.

has yet to play its aces, and they lie in those power-hungry but high-specification innards which allow it to run Windows 95 with no problems. For many, all the talk of ergonomics and the benefits of solid state electronics count as nothing in the face of this fact.

Although the situation as regards Windows CE applications is improving, there's nothing remotely approaching the range of software available for the standard Windows platform. This particularly applies to the Jornada, running as it does under Windows CE Pro with a class of processor new to the operating system. There are very few existing third-party applications which will run unmodified. Even if there were, current CE machines, the Jornada included, have neither the processing power nor the storage capacity for the applications to rival the complexity of those available for the full-size platform.

**Remember**, the Jornada comes as standard with 16Mb of RAM which it needs to use as temporary storage for program execution (the equivalent of system RAM on a normal machine) as well as application and data storage (the equivalent of a hard drive, ZIP disks or floppies). In other words, it essentially sports 8Mb of RAM and an 8Mb RAM disk, although it's possible to vary the balance between run-time allocation and storage. Compare this with the 32Mb of system RAM and 3,200Mb (3.2Gb) hard disk that ships as standard with a TravelMate.

**When you're used to** standard office applications, it's annoying to discover that you suddenly can't do a word count in Pocket Word or create a graph in Pocket Excel. With the TravelMate you

can work in an identical fashion to the way you do things on your desktop machine because, as far as the hardware goes, it is a desktop machine. And, for the myriad specialist and scientific applications out there that only run on Windows 3.1x or 95/98, there's just no alternative if you need to use them in the field.

DAVID FEARON

### PCW DETAILS

★★★★★

#### Acer TravelMate 312

**Price** Around £940 (£800 ex VAT) for the 312D, up to around £1,400 (£1,199 ex VAT) for the 312T.

**Contact** Acer 01753 487000

[www.acer.co.uk](http://www.acer.co.uk)

**Good Points** A powerful Windows PC in a tiny case. Runs all your desktop applications. A lot of hardware for your money.

**Bad Points** Battery life is poor. The keyboard isn't brilliant. The hard drive is a relatively vulnerable component.

**Conclusion** If you need to run complex applications in the field, it's one of the most portable choices around, and Windows CE is no substitute in this respect.

★★★★★

#### Hewlett-Packard Jornada 820e

**Price** £849 (£723 ex VAT)

**Contact** Hewlett-Packard 0990 474747

[www.hp.com](http://www.hp.com)

**Good Points** Superb battery life. Excellent keyboard. Completely solid state.

**Bad Points** Virtually no third-party software that will run on it, as yet. Very limited storage capacity. Really sophisticated applications are beyond it.

**Conclusion** It's what many people have been waiting for as a portable word-processing and email machine, but be aware of its limitations.

