



Logging on in the air

The digital world is not just for terra firma. Notebook in hand, high-flyer Wendy Brewer takes to the skies

Before you go...

You can get broadband hotspot access at the following airports through BT Openzone:

- Aberdeen
- Belfast City
- Birmingham
- Bristol
- Gatwick - International Departure Lounge, North Terminal
- Glasgow - Ramada Jarvis Hotel
- Heathrow - Terminal 1 International Departure Lounge
- Leeds Bradford
- Manchester - Hotel Etrop Grange and Hotel Hilton
- Stansted

Competition for internet users is far less intense in the air than it is on the ground. Two service providers dominate the in-flight online revolution - Connexion by Boeing and Inmarsat.

Inmarsat offers the cheapest service - both to airlines and customers - by using antenna equipment that already exists on most aircrafts. Unlike Boeing's service, which requires thousands of pounds worth of equipment installation, airlines need only upgrade the aircraft's existing avionics system - by equipping each chair with an internet port. Inmarsat's services are delivered to the carriers

through one of four sub-providers and the biggest of these is US-based Tenzing.

Tenzing has signed a deal with equipment manufacturer Verizon, which already has its 'Airfones' installed on hundreds of US airlines, providing the perfect gateway to the internet.

"Our equipment is small (about 10kg) and inexpensive. Airlines are looking at tens of thousands of dollars rather than hundreds of thousands, which in this climate is a much more appealing option," says Michael Pinckney, vice president of marketing at Tenzing.

But the service Tenzing offers would not qualify as broadband even under the

widest interpretation. It is an email facility - nothing more, nothing less - offering connection speeds of around 64Kbps (kilobits per second). The two-way email service will set passengers back about £6 for the entire journey, with additional charges for larger messages or those with attachments.

There are currently two products available: a laptop version, whereby users simply hook up their own equipment to the internet port, and a seat-back version available on planes with headset monitors.

Tenzing currently has no plans to upgrade its service to broadband, which would require minimum connection speeds of around 256Kbps.

	Inmarsat by Tenzing	Connexion by Boeing
What is it?	Two-way email facility	High-speed broadband
Applications	Send and receive email	Surf the internet, watch TV, listen to music, send and receive email
Cost	From £6 per flight	From £20 per flight
Availability	United, Varig, Continental, American, Cathay Pacific and Virgin	None yet
From when?	Available	From Spring 2004



Its email services are available on a handful of US flights and also on Cathay Pacific's South East Asian routes.

Over in Boeing's corner, its Connexion service is a different baby altogether. Boeing has gone straight for broadband, insisting its customers want to surf the internet at speeds equivalent to those available on the ground as well as being able to access audio and video applications.

The service requires airborne antennas, airborne servers, routers and all the associated wiring. A network operations centre, associated satellite uplink and downlink equipment and a business operations centre are needed on the ground, not to mention the leased satellite transponders. All this equipment

isn't cheap, costing carriers hundreds of thousands of pounds.

Boeing acts as a mobile ISP, taking care of all aspects of the service from installation to payment. And unlike Inmarsat it doesn't operate through sub-providers. The service offers connection speeds of around 256Kbps and provides two pricing structures. The fixed fee for unlimited access throughout the flight costs around £20, while the metered-usage scheme will set passengers back about £10 for the first hour and then 5p per minute thereafter.

The company's pilot schemes have produced favourable results, both in terms of customer experience and connection speeds. Boeing plans to launch the service commercially early this year. ☒

When in roam...

Back in the summer, BT Openzone signed a Wi-Fi roaming deal with US hotspot provider Airpath Wireless that allows access to 1,000 hotspots in the States, a figure expected to rise to over 4,000 in 2004. The agreement follows a similar deal between BT and TeliaSonera, offering Openzone customers access to Wi-Fi networks in France, Belgium and Thailand. In other words, you can cough up for your Wi-Fi access in the UK before you take off. Before boarding your plane, though, it's worth checking hotspot availability in your destination city. Log on to Intel's hotspot finder at <http://intel.jiwire.com/index.htm>. Regularly updated, it provides the best hotspot locator on the internet.



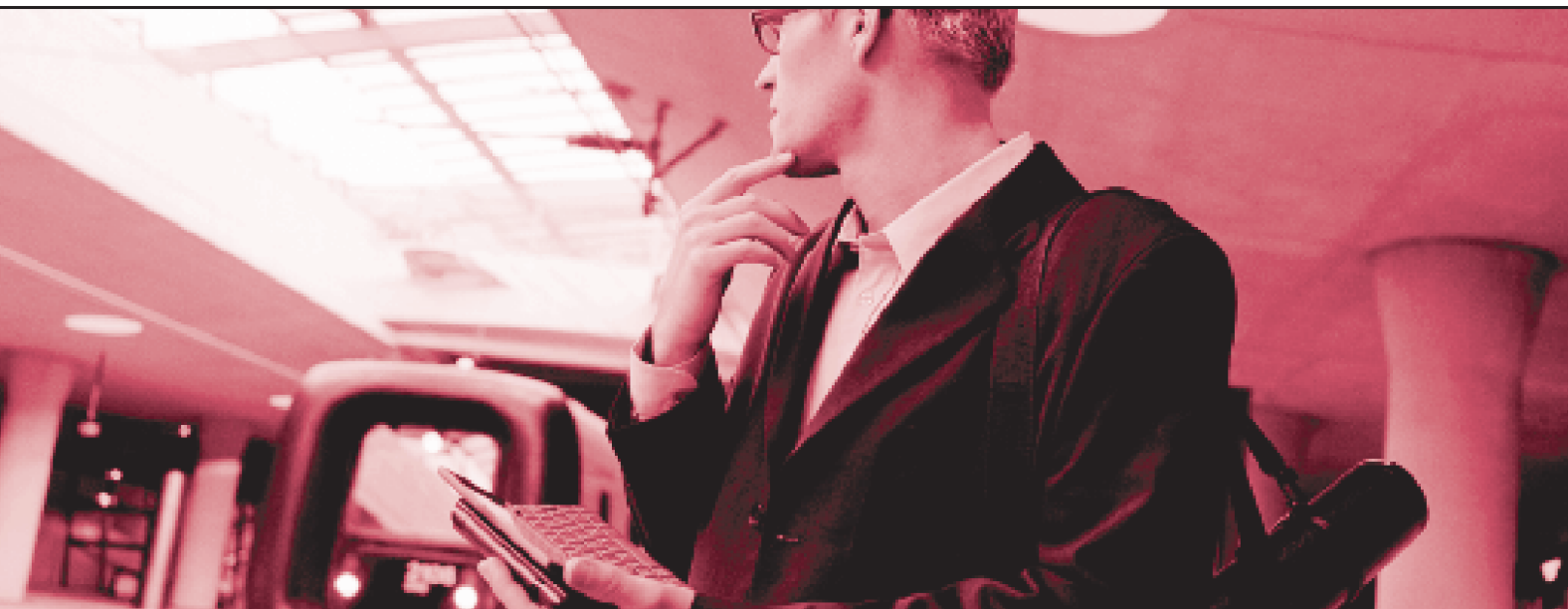
The carriers

» Lufthansa was the first airline to offer passengers onboard high-speed internet access, albeit on a trial basis. It ran a pilot scheme using Boeing's equipment from January to April last year on flights between Frankfurt and Washington DC. Lufthansa plans to offer a wired and wireless service, providing connection speeds of up to 1Mbps (megabit per second). It intends to make the service available on about 80 of its long-haul flights from March 04.

» Scandinavian Airlines, or SAS, is close behind with plans to roll out Boeing's broadband service by spring 04. It has chosen the wireless option, eliminating the need for additional wiring and internet port installation. Users will be able to access the service via their own laptop or seatback monitors (where available). SAS hopes to kit out its entire long-haul fleet by 2005. But British Airways, which took part in the pilots, is still weighing up the cost and said it is carrying out more market research to determine exactly what customers want before it makes a decision.

» Whereas Boeing's carriers are looking only to upgrade long-haul flights (at least for now), Tenzing's customers see the importance of making the product available throughout the whole of the aircraft on all routes, especially in the US where internal flights are extremely popular. United Airlines, Continental, Varig, Cathay Pacific and Virgin Atlantic already offer an aircraft-wide email service. Tenzing said it plans to announce partnerships with European carriers over the coming months.

Rank	Country	Hotspot total
1	United States	12,716
2	United Kingdom	2,342
3	Japan	949
4	Germany	703
5	Taiwan	620
6	Australia	454
7	Sweden	435
8	Canada	375
9	Austria	364
10	France	305



Action stations

If you want guaranteed access to email, the internet and your company network whenever and wherever you want, there's still only one realistic option. Guy Dixon shows how a combination of GPRS and a lightweight notebook cuts the mustard

If like me you spend a lot of time on trains and in stations, life without a notebook and always-on internet access would soon turn into dead time.

Though business hotels in the UK are catching up with their US counterparts, where wireless networks and ethernet connections often come as standard, there's no guarantee you can get internet access in your hotel room unless you opt for the exorbitant dialup option.

Of course, if you believe the marketing hype from Intel - which is trying to make its Centrino notebook processor range synonymous with the concept of wireless broadband internet access - I should be able to make use of the burgeoning number of broadband hotspots. The problem is they're not really that burgeoning unless you're staying at a Hilton that's teamed up with hotspot ISP BT Openzone. And at the end of a hard day, the last thing you want to do is march around town looking for a hotspot-enabled Starbucks.

What's more, broadband hotspots don't really exist on trains - though GNER is piloting Wi-Fi for business customers en route from London's Kings Cross to Scotland.

It's highly likely that you will soon be able to briefly hook up a broadband hotspot as you pass through major train stations on your way to your destination. But for the main duration of your journey there's still only

one realistic option: GPRS (general packet radio service), available wherever you can get a mobile phone signal.

Dubbed 2.5G, the supposed stopgap before the arrival of 3G, the failure of the latter to establish itself (see *FAQs*, opposite) means that cellular operators have instead focused on GPRS. This technology offers access to the internet, to email and company LANs (local area networks) using existing mobile phone networks.

Access speeds vary, even with the same service provider. Most commonly you get 30-40Kbps (kilobits per second), so it's not perfect. However, it's manageable if you're leisurely sorting through some email on the train or checking all is well on the *PC Advisor* website on the 08.15 from Euston to Manchester.

PDA phone or notebook?

Although it's possible to access the web and email over GPRS using a handheld PDA smartphone, to my mind this is still technology in search of an application. I've tried O2's Xda but soon tired of web browsing on a diminutive screen.

Though the Xda was a courageous step forward in trying to establish the PDA-cum-phone as a recognised form factor, its under-strength battery, limited 12bit colour screen and poor reception capabilities meant

A lot of travellers use a GPRS phone as a modem for connecting their notebook to the internet. But even with Bluetooth this can prove painstaking. So, again, I'm sticking with my GPRS network card



Vodafone Mobile Connect Card

it soon found itself in the *PC Advisor* ex-review items stockroom. It's also embarrassing talking into a device that looks like a portable TV.

I'm much happier with a laptop fitted with a GPRS network card. I use a Vodafone Mobile Connect Card (shown above) which costs around £149 inc VAT and comes with a friendly dashboard interface.

You also have a choice of connection. A lot of travellers use a GPRS phone as a modem for connecting their notebook to the web. But even with Bluetooth this can prove painstaking. So, again, I'm sticking with my GPRS network card which has never given me any problems.

Any down sides?

I find regular usage drains my laptop's battery much faster than it normally would - in fact, it dies up to a

third quicker. This point needs serious consideration if you're going to spend a long period of time away from a power supply. It's also worth noting that performance tends to drop noticeably when you're flashing through GPRS cells on a rapidly moving train.

Next steps

I want to try the recently announced Sony Ericsson GPRS Wi-Fi card, a combined GPRS and Wi-Fi PC Card. The GC79 (see below) costs £250 and lets you access the web via Wi-Fi 802.11b networks at broadband speeds when you're in the vicinity of a hotspot. And when you're not you can always rely on your mobile phone carrier's GPRS network.



Sony Ericsson GPRS Wireless LAN PC Card GC79

FAQs

What does GPRS stand for?
General packet radio service.

What is GPRS?
It allows users to transfer information over the GSM (global system for mobiles) mobile phone network in small packets. In other words, it breaks an email down into little packets of information and sends it over the network. Packets can be routed via different parts of the network, taking advantage of spare capacity, and reassembled at the destination in the correct order. This is exactly the same method used on the internet for moving information around.

Who is offering GPRS?
All the big four mobile network operators - that is, Vodafone, T-Mobile, O2 and Orange - have launched GPRS mobile networks designed specifically to carry data (as opposed to voice) traffic.

Is it the same as 3G?
No. GPRS is not 3G, the long-awaited high-speed data network for which mobile operators paid large sums to acquire operating licences four years ago. GPRS runs at a fraction of 3G's speed but is far more available.

How fast is it?
GPRS offers users always-on connectivity but can rarely provide download data at speeds greater than 40Kbps (kilobits per second). Still, that's a lot better than the dark days of GSM which made internet access almost unbearable at speeds of 9.6Kbps.

How do you pay for it?
Buying a GPRS network card for your laptop will cost between £150 and £250. You'll also need a connection to your mobile operator's GPRS network. For light or medium usage - up to 15MB of data sent and received each month - Vodafone offers the

continued overleaf

FAQs continued

Mobile Connect Select price plan. This has a monthly cost of £5 ex VAT with data usage charged at £2 ex VAT per megabyte.

GPRS airtime is billed according to the quantity of data transmitted rather than pence-per-minute-based charges. This means that users can stay connected to the network without incurring high costs for 'reading and thinking' time. Charges are only applied when data is transferred.

GPRS usage is billed by the amount of data sent and received. Information is measured in megabytes (1,024KB equals 1MB) and the price plans offered by the networks are based on volume of usage, linked to a fixed monthly line rental.



O2 Xda II



Gadgets a go-go

After a slow start, a wide range of GPRS-compatible mobile devices are becoming available.

O2 Xda II

O2 has recently had a second and, by all accounts, much-improved stab at its hybrid PDA/phone, the Xda II. This smartphone is a GPRS-enabled handheld combined with a mobile phone also features a colour screen and the latest Pocket PC platform.

O2 claims weaknesses in the original Xda, such as short

battery life, 12bit colour screen and poor reception abilities, have now been overcome. It continues to offer full-colour internet and email access, Microsoft Pocket PC tools, a personal organiser, built-in mobile phone and games and video access. With Xda II, O2 has added more memory, a faster processor, Bluetooth and optional wireless LAN capabilities, as well as an integrated camera.

www.o2.co.uk

£349 with a 12-month contract

Mobile browsing that works like a dream

BlackBerry is an oddity. It doesn't use any of the mainstream PDA operating systems such as Pocket PC, Symbian or Palm. To get your company Notes or Exchange email on it requires an outlay in the region of £2,500 and several hours of professional IT effort. And it doesn't even have a stylus.

But it works like a dream. It uses GPRS to give you truly mobile email and web browsing. It also provides voice calls, SMS and all the PDA-alike apps you'd expect such as diary, notepad and address book.

Most email is inbox admin - forwarding to colleagues, one-line answers and deleting low-level spam. Inbox admin is what consumes the whole morning when you haven't had access to email for three days. It is why you carry a leaden laptop on a business trip and what runs up a hotel phone bill larger than the national debt.

Take a BlackBerry on an overseas trip and your luggage halves. And because you are not tied to a fixed line, inbox admin fits into spare minutes of the day - riding in a cab, taking a coffee break or waiting for a meeting to start - rather than an hour in your hotel room doing battle with arcane modem settings.

Access to company email is not cheap or easy on the BlackBerry but logging on to a Hotmail, AOL or other consumer email

account is because RIM has already done the back-end integration for popular ISPs.

Populating the address book accurately and thoroughly is key to making the best of a communicator such as the BlackBerry. Pull up a name and choose how you want to communicate - email, SMS or voice.

Web access is surprisingly easy and fast, comparable with dialup anyway, provided the site is optimised for WAP-style browsers. Browsing is the wrong word for what you do with a GPRS handheld. Info-snacking would be more appropriate - quick hits to look up train times on the way to the station, check your credit card limit outside the shop or cast your vote in an online poll.

Experience the freedom of web access any time or place from a wireless handheld and you begin to wonder how you ever lived without instant info-gratification. ☒

RIM BlackBerry 7230

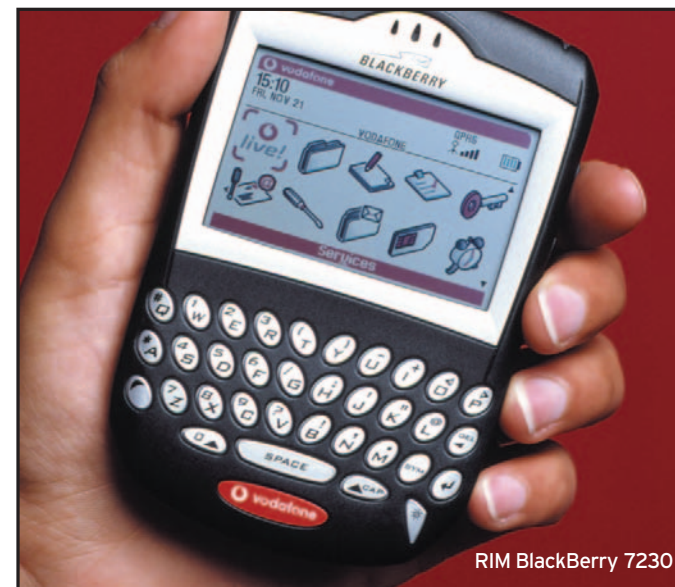
Vodafone started offering an own-branded version of RIM's BlackBerry 7230 handheld to its European business customers in November 03. Users without corporate email setups can receive messages from their internet service provider and access up to 10 email accounts.

Last month Vodafone started selling these handhelds to small businesses and individuals, customising the user interface to provide access to Vodafone Live content.

The RIM BlackBerry 7230 from Vodafone, like all BlackBerry devices, automatically sends email messages to users' handheld devices complete with attachments. You can read enclosed PDF documents and Office files but unfortunately you can't edit them.

www.vodafone.co.uk

Price: £200/£20 per month



RIM BlackBerry 7230

Whatever happened to 3G?

As the previous millennium drew to a close, 3G was set to take over the world. Four years on it's still a long way from getting off the ground. 3G's biggest problem is that mobile carriers haven't worked out how much people will pay for an always-on network that offers broadband speeds.

Hutchison's 3 network is Europe's first major stab, but it has been hit by a string of problems and has failed to reach its target of one million UK customers since launching in March 03. Industry experts put the figure at a much smaller 200,000. Not even reducing the price of voice payment plans to as low as £25 per month has had much effect.

Vodafone - Europe's largest carrier - is being particularly cautious, famously saying it

won't make the necessary investment until 3G 'works'. France Telecom and Deutsche Telecom, which own Orange and T-Mobile respectively, have made mutterings about rollouts over 2004 but neither network is likely to cover more than the major metropolitan areas.

So mind-blowing were the sums paid on the original 3G licences that the carriers won't start investing until they can be sure of a return. The cost of 3G licences across Europe currently totals £77bn and it's estimated that to roll it out comprehensively will cost an extra £73bn. So far just £8bn has been spent.

This gives GPRS considerable mileage. Meanwhile, in a classic chicken-and-egg situation, GPRS services are not sufficiently debilitating to create pent-up demand for 3G.





Hitting the road

He doesn't have a driving licence yet he still thinks he understands life on the road. Can the latest wireless gadgets enhance the in-car experience and bring harmony where there was none? With the help of his long-suffering girlfriend, Ben Camm-Jones finds out

Couples have their ups and downs, but there's one place where arguments are more frequent and fiercer than anywhere else - the car. Fighting with your partner over their map-reading and driving skills is something we've all been through, but it doesn't end there. What radio station you listen to, whether you have the stereo on at all and sending text messages with one hand while steering with the other are all bones of contention in the average car.

My girlfriend Katie and I are no different and we're desperate to stop every drive to the country turning into all-out war. So what can we do to ease the tension?

Navigating with Navman

Okay, you don't need it to get around your local town. But if

you're planning a long journey then the Navman ICN 630 GPS could prove invaluable.

Setting up the Navman was a fairly simple business, even if it did take several minutes to load the maps on to the device itself. It was a simple case of linking the GPS (global positioning system) to the PC via a USB port, installing and registering online then perusing the manual and loading the maps to the system.

Once you're in the car you need to fix the Navman ICN 630 GPS to either the dashboard or the windscreen with a sucker, though you'll obviously need to put it somewhere that isn't going to obscure your view. You'll also be stuck if your car doesn't have a cigarette lighter because you'll need the slot to plug in the device.



Jabra FreeSpeak
BT200 headset

The Navman updates itself every second once the fix has been established. Thanks to this, all instructions came through in plenty of time and we didn't miss a single turning



Navman ICN 630 GPS

Bluetooth boost

You could be forgiven for having forgotten about Bluetooth as it has been somewhat overshadowed by Wi-Fi. Wireless networks based on standards such as 802.11b not only transmit data faster than Bluetooth devices, but they do so over a much further distance.

Bluetooth is the English translation of the surname of a 10th century Danish ruler, King Harald Blatland. King Blatland united the Danes and the Norwegians; Bluetooth, a wireless technology, unites electronic devices without cables.

Bluetooth devices can send data to each other but have a maximum range of 10 metres. Okay, it isn't much good for networking devices across a large office but it really comes into its own in the car.

Range isn't a problem when you're in a small motor vehicle and you don't need any kind of hub because the devices talk directly to each other. It's also relatively cheap. Though it might not be practical to use in the home or the office, the car is the one place where Bluetooth could reign supreme.

The multi-directional antenna meant we got a good fix on our position quite quickly. After setting the destination, we set off and I allowed the soothing voice of the Navman to guide Katie while I did my best to remain utterly silent. After arriving at our destination without incident and without the ICN 630 flying out of the window, I breathed a sigh of relief. The Navman updates itself every second once the fix has been established. Thanks to this, all instructions came through in plenty of time and we didn't miss a single turning.

Much better in terms of design, the Jabra FreeSpeak BT200 fitted nicely into either ear and didn't look half as stupid. Lightweight, at only 23g, it was easy to operate and, as the microphone is closer to the mouth, we didn't have to shout

Handling headsets

At the beginning of December, using your mobile phone handset while driving became illegal (see *Don't talk and drive* on page 44). Katie is perfectly happy to ignore her mobile if it rings while she's at the wheel, but her job involves a lot of travelling and also requires her to be contactable at all times. Pulling over every time the phone rings, especially when you're enduring the nightmare that is southeast London suburbia during rush hour, is quite a chore.

The solution? A Bluetooth-enabled mobile phone and Bluetooth headset. With no wires and nothing you have to look at to operate, it seems ideal. There is one down side, though: the headset makes you feel somewhere between slightly silly and utterly ridiculous.

We tried a couple out to see which worked best. The first problem we had was actually attaching the headsets to the ear. The Belkin model, in particular, seemed to have been designed with anything but a person's head in mind. It didn't fit around or in the ear properly and weighed so much that it felt like it was going to drop off.

In use the Belkin worked well but there was one major problem: the mic is far away from the mouth. Cars are pretty noisy things anyway and if you're listening to your stereo you'll really need to speak up to be heard. You might as well put the phone on the dashboard and shout.

Much better in terms of design, the Jabra FreeSpeak BT200 fitted nicely into either ear and didn't look half as stupid. Lightweight, at only 23g, it was easy to operate and, as the microphone is closer to the mouth, we didn't have to shout. It



above and below:
JVC DAB stereo system

Product information

JVC DAB stereo system
www.jvcmobile.co.uk; £299 inc VAT

Sony Ericsson T610
www.carphonewarehouse.co.uk;
free with certain contracts, £250
SIM-free from Carphone Warehouse

Jabra FreeSpeak BT200
www.jabra.co.uk; £50 inc VAT

Belkin Bluetooth Headset
www.belkin.co.uk; £86 inc VAT

Navman ICN 630 GPS
www.navman-europe.com; £845 inc
VAT from Dabs.com

got a thumbs-up from me because of the price, styling and usability, while Katie liked it because she could hide it easily under her hair. She was, however, concerned about people seeing her apparently talking to herself while driving.

The Sony Ericsson T610 has a fairly different menu to mobile phones that we've been used to in the past, but it was no trouble getting the T610 to recognise both the Belkin and Jabra headsets.

Consisting of a head unit, DAB box and stick-on aerial for the windscreen, the JVC DAB pack has everything you need for converting your car's radio system from analogue to digital

Pumping on your stereo

The last of the products we tried out was a JVC DAB stereo system. Consisting of a head unit, DAB box and a stick-on aerial for the windscreen, the JVC DAB pack has everything you need for converting your car's radio system from analogue to digital.

We had it up and running in less than half an hour and, because she'd never heard digital radio broadcasts before, Katie was very impressed by the sound quality. Reception was always clear and consistent, although we were both slightly dubious about the claims of CD-quality sound - it was good but not that good.

All in all, bringing your car into the digital age isn't too difficult. And even if the luxury items such as GPS navigation systems are quite expensive, Bluetooth-enabled phones and headsets don't cost the earth and will have uses outside of the car.

The DAB radio would probably be considered a luxury item too. However because it plays CDs, makes switching stations a breeze and has excellent reception, it's well worth the money. ☒



Don't talk and drive

There's very little doubt that driving and using a mobile phone handset at the same time is very dangerous and the government finally got around to making it illegal on 1 December 03. Now if you get caught using a mobile phone behind the wheel, the very minimum you'll get away with is a £30 fine. In the worst-case scenario you could be £1,000 poorer and have points put on your licence.

Just a few weeks before the law came into effect, a survey carried out by the Association of British Drivers and mobile headset manufacturer Jabra found that 40 percent of drivers were unaware of the impending legislation. And more than a quarter of the self-confessed 17 percent of people who regularly use mobile handsets while driving said that the new law wouldn't change their behaviour.

These worrying statistics are not that surprising when you consider that many employees who spend a large chunk of their working day on the road have come to rely on their mobile phones.

Hands-free kits are nothing new but it seems that employers are reluctant to provide them to their staff and equally unwilling to issue guidelines about using handheld mobiles while driving. Hopefully the new legislation will help to change things, but until more of the public are made aware of this law and its implications we might have to wait.