Big brother

Journey measuring and monitoring technology is just the start, with telematics systems. If you want real-time recording and reporting on vehicle, fuel and driver efficiency, it's all there, writes John Fife

Don't confuse global positioning satellites (GPS) and satellite navigation systems with telematics. To do so would be a bit like comparing Hamish McBeth with Jason Bourne: the first will show you where to go, while the second will show you, then follow you, and tell your partner or boss where you've been and how long you stayed.

That's the 'scary' part: if you are not fully aware of just how far tracking and recording systems have travelled, then the truth might blow you away.

Security and asset protection are good reasons for running with a form of telematics. For instance, Nottinghamshire County Council recently had one of its pickup trucks stolen. Within 30 minutes, the police had located and recovered it safely. And that was all thanks to a Thatcham Category 5 satellite tracking device from Masternaut Three X.

Then again, a van driver escaped a fine and penalty points when the police case against him was dismissed. Using a speed-gun, police had charged him with driving at 42mph in a 30mph limit. The driver contacted his telematics provider, Navman, which was able to confirm that he had not been exceeding the speed limit. Apparently, he was in clear line of sight, with eight satellites tracking him. Navman was able to prove an accuracy of 3mph.

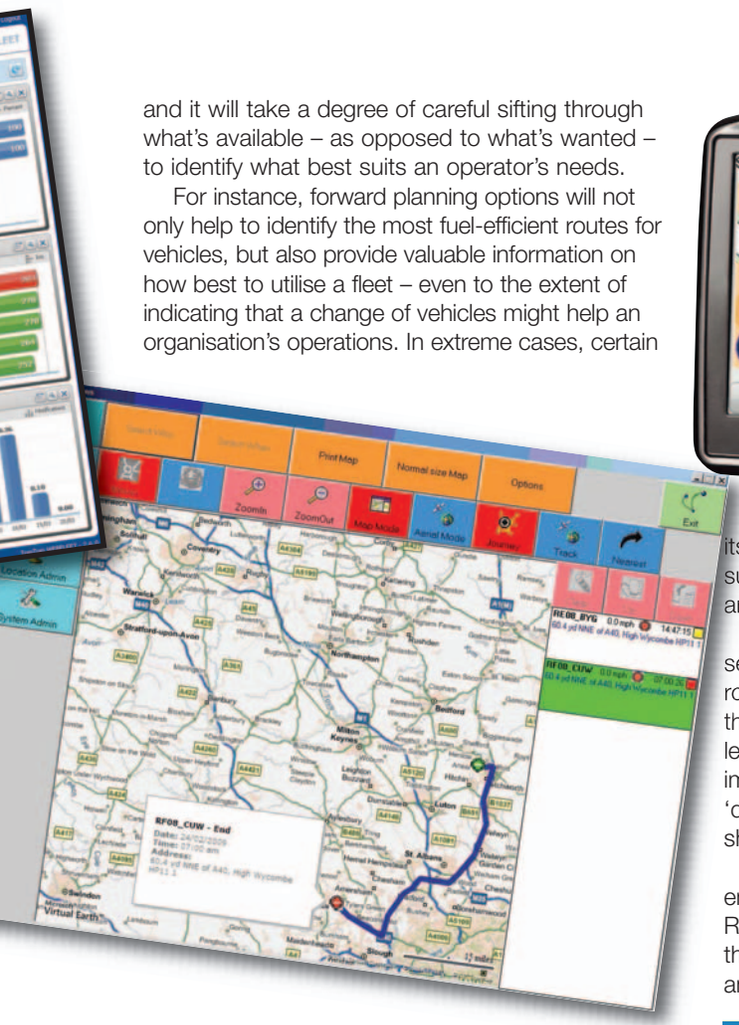
Add technology and save fuel

Another advantage is using this breed of equipment to improve fuel economy, not just in determining the most fuel-efficient route when driving to and from jobs, but in encouraging drivers to exercise more care and thought about their own driving practices.

On the same basis, these systems can be used to promote road safety and more responsible driving by staff. Increasingly, employers are taking this on board and using telematics data to reward careful drivers. Some have gone as far as making it competitive, with the safest and most fuel-efficient drivers receiving a monthly or annual reward.

And that's just the start. Reporting functions behind the software, these days, are mesmerising,

Right: Standalone navigation systems are now common in trucks and vans



Left: TomTom FTA Far left: Example of TomTom reports Centre: V-SOL software output

and it will take a degree of careful sifting through what's available – as opposed to what's wanted – to identify what best suits an operator's needs.

For instance, forward planning options will not only help to identify the most fuel-efficient routes for vehicles, but also provide valuable information on how best to utilise a fleet – even to the extent of indicating that a change of vehicles might help an organisation's operations. In extreme cases, certain transport managers have replaced their fleets of 3.5-tonne vans for a mix of smaller vans and 7.5 tonners, whereas others have migrated from 7.5 tonners to 12 or 18 tonners, so that they can make fewer trips and carry more each time.

At the other end of the scale, for operators with a fleet of medium to large vans, the figures might suggest a switch to a bigger number of small vans and a few larger crew-cab vans.

Another big advantage that the latest generation of live route planning systems offers is the ability to incorporate radio reports on traffic congestion, letting them navigate drivers around bottlenecks. This won't replace local knowledge in city centres, but it can be a big help. David Isom, of telematics supplier V-SOL, says: "With oil costs predicted to be on the rise, those companies who have teams out on the roads – whatever their size – are bound to suffer. This is where the latest vehicle tracking technology can make a real difference."

And he adds: "What we now have is really sophisticated, touchscreen technology that allows companies and employees in the field to manage their operations more efficiently and effectively, reducing their fuel costs and delivering a higher level of customer service." Indeed, Isom believes that good tracking technology will quickly pay for itself many times over – although his advice is make sure fleet managers research fully what information and control they will really get from any system.

Taking things a stage further, online telematics service provider Cybit has launched SpeedSafe, a road speed management reporting tool. Following the introduction of new Corporate Manslaughter legislation last year, which emphasises the importance of employee risk management and 'duty of care', the company says its technology should be high on corporate agendas.

"The Health & Safety Offences Act requires employers to mitigate risk for mobile employees. Reducing speeding is one of the primary ways that this can be done," comments John Wisdom, sales and marketing director at Cybit. "Employers need

Behind the scenes with buses

Functional requirements of telematics systems differ according to vehicle type and operation. Telematics for bus operators, for example, doesn't conform to the 'one size fits all' criterion that covers vans – and, in many respects, system requirements for trucks are different again.

"While the systems in cars come from a tracking background, and trucks focus on fleet management, tachograph and logistics, the focus for bus operators is on reducing vehicle downtime, improving fuel economy and passenger safety, and keeping to schedule," explains Paul Kay, managing director of Actia UK.

Actia's background is in designing and manufacturing OEM telematics for the likes of Volvo. Combining that with experience in onboard electronics and diagnostics has led the company to develop an integrated solution, designed specifically for buses.

In particular, says Kay, the company has developed a dashboard integrated into the electronics controlling the vehicle. Data transmitted through its telematics platform can then be used to monitor fuel consumption, idling, acceleration, braking and cornering, as well as vehicle systems and CCTV, he says.

"We aim to avoid the problems bus operators run into when adding bolt-on pieces of equipment, such as the CCTV and telematics systems, from different suppliers," continues Kay. "CANbus is a safety-critical data link that influences the operation of the engine, transmission, suspension, ABS, etc. Connecting equipment into this, without systems engineering expertise, may seriously affect the safe or efficient operation of the vehicle," he warns.

Kay points out that Actia's integrated technologies are available as a common solution across a bus fleet – either as a retrofit for older vehicles or as an OE fit on Optare vehicles, for example, through the next-generation dashboard.

"This solution provides driving information, as well as feedback on economy and safety factors, where the driver can be alerted via the dash in real time," says Kay.

Bad boy in a 'wired' Kangoo

To fully appreciate the TomTomWork system, I drove a suitably equipped Renault Kangoo van, which recorded my daily progress and transgressions. Having seen what it could do, I set out one afternoon to see just how bad a report I could generate.

With Renault's permission, I executed a few sudden stops, handbrake turns and some fast cornering on a private stretch of road. Not only did the report list the locations, times and durations of each manoeuvre; it also showed the g-force generated and it gave me a 'severity star rating'. I managed to get some perfect 'fives' for my emergency stops, j-turns and cornering. But, had this taken place during work on the public road, my only reward would have been a P45 and a visit to m'Lud.

a way not only to see when instances of excessive speed occur, but also to implement and manage a process to reduce them. Speedsafe is an effective way to do this."

He sees Cybit's speed management package as part of a complete 'duty of care' module that also reports on excessive journeys, distances driven without breaks and other problematic driver habits. He also highlights the system's practical transport aids, such as vehicle servicing information, and driver training and licensing checks for fleet vehicle and driver management.

So far, so good, but a problem arises when reports from telematics systems may be used against employees. I myself was rewarded with a bad driving report while assessing a small Renault van recently (see above). The report highlighted several instances of 'harsh steering', each of which attracted a poor star rating. The manoeuvres were safe at the time, but how would this be seen by someone who wasn't there and was simply reading a report? It also highlighted instances of 'speeding' and their duration.

Whether this is sufficient grounds for issuing an employee warning, or even dismissal, is another point entirely, but look at it from a positive point of view. It does at least provide good feedback for assessing the case for additional driver training.

Which brings us to the police authorities and insurance companies. In the event of an incident, the police can request any on-board information that may be available to determine and/or apportion blame. Of further concern might be a request from an insurance company to see this information: it may withhold payments until it sees the appropriate print-out. That may be fine, but in a multi-vehicle accident, when only one of the three or four vehicles has such information, what price fairness then?

And on another minor, but still important, point, any system is only as good as the mapping. So make sure you get the latest version and maintain its updates.

Is the price right?

Apart from the hardware price, which can be anything from £300 upwards per unit, there is the ongoing subscription charge for service and reports. This starts from around £1 per vehicle per day but, for large fleets, that could be reduced to 60p per vehicle per day. However, it is also worth chatting with your insurance company before you go ahead with a contract, as there is the potential for premium savings, which might just be sufficient to cover the cost of the telematics system for your fleet.

Van manufacturer Citroën is leading the revolution with an introductory entry to the world of fleet management. Its existing free TrafficMaster equipment can now be enhanced by signing up to fleet management at the subsidised rate of £19.99 per vehicle per month.

As for the road ahead, if you think the science of telematics has reached its limits, forget it. There's a lot more to come. Imagine a world where built-in barcode scanners log every parcel or load on a vehicle and can then issue invoices when the goods have been delivered. Cameras can already be fitted to the front and rear of any vehicle, with pictures then relayed directly to head office. And voice communications are already available, too, so the driver can talk directly to the boss or receive new instructions while on the move.

Remote weighing devices are also already here, with tippers being monitored while loaded by bucket, loadall or shovel – and the police are wise to this. They have now embedded scanners in certain roads linked to number plate recognition cameras. The first you know of an infringement is when the summons drops through your letterbox.

The whole issue of telematics takes on a new dimension in such cases but, on the whole, the benefits far outweigh any disadvantages. In 10 years' time, transport technology will be the master and man will simply be the servant. TE