PARALLEL LINES

The use of telematics to manage UK truck fleets goes back to the 1980s. Ever since, there have been questions as to whether its primary purpose should be monitoring vehicle condition or vehicle position, and whether it is better to buy from the vehicle manufacturer or a third party. Richard Simpson asks whether one system can tick all of the boxes, or even needs to

Back in the 1980s, Securicor developed the Datatrak system to monitor its secure transportation vehicles, using a network of low-frequency radio transmitters to establish the asset's location, which was transmitted back to a central control station. First used on the company's armoured van fleet, it was subsequently opened to third parties, although it is now defunct. NFC developed the Isotrak system in 1993, spinning it off as a third-party provider three years later.

From 2000, when the US military's satellite-based GPS system was decrypted, developers could create vehicle location and navigation systems accurate to within a few metres without a dedicated radio network. These proprietary location-based systems developed in parallel with, but separately from, engine manufacturers' systems that recorded internal data from individual trucks, with the electronic control units of Euro 1 trucks and beyond monitoring engine inputs and outputs.

ERF and Foden offered access to performance data from the Cummins L10 Celect engine and its successors from the early 1990s. Cummins' Road Relay system had a dash terminal, allowing drivers to monitor their fuel consumption and driving techniques live, and technicians could download performance reports for the operator. (Its current system is called Connected Diagnostics, which links into third-party telematics software from Geotab, among others.)

Volvo's Dynafleet used Cummins' Road Relay to gather data via the common SAE J1939 interface which had been established to allow just this kind of interoperability. Launched in the mid-1990s, Dynafleet was arguably the first true telematics system, enabling reports about the vehicle's health, location and performance to be sent back to the vehicle's base and the Volvo dealers via the mobile phone network, plus integrated SMS messaging between truck drivers and traffic offices. In its first incarnation, Dynafleet could only operate on Volvo trucks, although that later changed.

Other truck manufacturers followed: Daimler launched FleetBoard for Mercedes-Benz trucks in 2000; by last year there were some 220,000 equipped vehicles worldwide. In 2006, ACEA's Heavy Truck Electronic Interface Group, consisting of all seven main European truck manufacturers, started an initiative to link the truck's CAN-Bus network to information in the digital tachograph via the FMS Interface, which was completed a few years later. By 2011, Scania was line-fitting its OnBoard telematics facility to all production trucks, with free activation and a 10-year subscription being offered to all customers buying trucks fitted with the equipment, even if the vehicle was purchased second-hand. Today, the manufacturer uses the data the 250,000-connected truck fleet generates to produce predictive maintenance schedules for individual vehicles.

But the third-party market continues to flourish. This year's CV Show saw over 80 exhibitors listed in the 'Fleet Management Systems' category.

DECIDING THE GOAL

Choosing a system, whether OEM or third party, means first deciding what the goal is. Some operators have the primary objective of monitoring driver performance to reduce fuel consumption; others are more concerned with safety-related matters such as harsh manoeuvres and speeding, although the two will go hand-in-hand, to a certain extent. Others will want to prioritise vehicle location and

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load state, and the hours a driver has left before a break or rest, or the most efficient order for drops and pick-ups. For parcel or pallet delivery, the key is proof of delivery, and a system that can't provide this is a non-starter.

Fleet engineers will probably have to fight for a system able to monitor vehicle condition. But they may have an ally on their side: there is increasing focus – not just from the truck OEMs – on systems designed around the monitoring of vehicle health, but also from the makers of trailers and tyres. For some operations, it makes more sense to track trailers than it does tractors. Unaccompanied trailers can be 'lost' at customers' premises. It's also easier for them to fall through the net when it comes to mechanical condition and maintenance.

That won't happen if the trailer is from Schmitz Cargobull and is fitted with the manufacturer's SmartTrailer system. "It monitors the trailer's critical systems, including the brakes, tyres and the fridge unit," explains Simon Mols, appointed to handle the company's telematics in the UK earlier this year.

"It raises the degree of transparency for the operator. For instance, if the trailer EBS develops a fault, a light on the dash of the tractor will be illuminated. But with SmartTrailer, an alert will also be sounded at the traffic office. The error code will come up and a decision can be made as to whether the vehicle should halt immediately, or progress to the next service area. The same goes for tyre or fridge-unit problems.

"Most of our customers use telematics already, but this system raises the game considerably. It's not just about location. I avoid calling it telematics and prefer the term 'active monitoring'. All data is accessible to customers via an online portal. The tyre-pressure monitoring alone can generate considerable cost reductions: most tyres that fail do so because they have been run too hot too long because of underinflation." Other functions monitored include door opening, axle weights, brake wear and a very accurate odometer via the ABS.

KEEPING TABS ON TRAILERS

All makes of trailer can use Effitrailer, a trailer-monitoring system marketed by Michelin and aimed at fleets with 100 trailers or more. Michelin claims tyre-related trailer breakdown reductions of up to 50%. Fuel costs may fall: just one under-inflated tyre can increase a rig's diesel consumption by 4-5%.

While Daimler and the Swedish truck manufacturers came to market with their own systems, DAF and MAN settled on partnering with Microlise. DAF subsequently launched its own DAF Connect service at the IAA show in Germany, and more recently MAN announced a partnership with Rio, which offers a single platform for all makes of truck and trailer, but, like MAN, is part of the Volkswagen Truck & Bus Group.

David Lester, head of fleet management at MAN Truck & Bus UK, emphasises that Microlise is still the system of choice for MAN, and Rio's integration with MAN vehicles is still evolving. "Traditionally, Microlise looked at operational matters: distance travelled versus fuel used, for instance. But we've developed a new package, Fit2Go, which includes MAN Check monitoring of vehicle health, and involves predictive monitoring of the truck's condition to minimise downtime. Operators get four years of MAN Check remote health diagnostics free with every new vehicle."

In addition to MAN Check, the Fit2Go package includes MAN Ecostyle driver support and MAN Track, which is Microlise's track-and-trace function. Lester explains the mechanics of the system: "Microlise's portal is permanently connected to the truck's OBD port, which gives real-time access to all diagnostic codes generated by the vehicle. This means we have been able to change the workshop service process. Now, when a vehicle is booked in for an inspection or service, an automatic check is made to the MAN Check record. Urgent unscheduled issues are flagged up as 'red' alerts, and non-urgent as 'amber'. The workshop can give the operator an idea as to how long the service will take at the time of booking, and make arrangements to obtain the correct replacement parts, book a service lane for an appropriate time, and arrange for a specialist technician such as an electrician if required."

"As the systems have become more sophisticated, it's been useful to be able to drill down into the data and discover more about fuel efficiency and the way the vehicles are being driven"
Freddie Wright

He contrasts this functionality with its new Rio platform. "Rio telematics is a bit like the Apple concept, with apps to download as required. More apps are being developed, but not quite at a pace to replace Microlise – yet."

The monitoring of driving style enabled by telematics is not just of benefit to the operator. With most new trucks on some form of R&M, MAN is exploring the possibility of introducing a reward-based maintenance scheme, and is currently testing this initiative with selected customers. It would pay a 5% rebate of the total R&M cost, on a vehicle-by-vehicle basis. Minimum criteria would be that vehicles were driven to a 'B' standard or higher over a three-month period, based on standard MAN parameters. It is interesting that the manufacturer is prepared to share the benefits brought by the system.

THE SPICE OF LIFE?

But are such innovations enough to persuade operators to put all their eggs in one basket, with manufacturers supplying not just the vehicles but the system that monitors them as well?

Perhaps the Microlise-MAN approach indicates the way forward: collaboration. One of the oldest names in the field, Isotrak, has not only survived, but has also been re-energised in the past two years with the acquisitions of Verilocation and Alcolock. In May it launched what it claims is the first OEM telematics system for LCVs: Renault Trucks Vanintelligence. Or there's the new API from SmartWitness that allows a video solution to be added to any telematics or fleet management software.

What is clear is that most operators need to track mixed marque fleets, a requirement that pushes some towards third-party solutions. For example, Wrings Transport of Avonmouth signed up with independent MiX Telematics in 2008. "We went with MiX because it was an 'all-makes' service: back then we ran five different makes of truck," managing director Stuart Wring recalls. "We've since rationalised the vehicles, and have settled on Scania and Mercedes-Benz as tractor suppliers, and Mercedes and MAN for rigids. If we were a two-make fleet, then I'd be happy to use the manufacturers' own telematics systems."

At the UK's most famous haulier, Eddie Stobart Logistics, the preference is for a third-party solution. Over the past year, Stobart has implemented a bespoke solution created by Microlise across its fleet of 2,200 vehicles and 3,800 trailers. It has replaced all in-vehicle technology with the Microlise DriveTab – allowing it to capture more granular information than ever before. This information is processed to improve fleet visibility and is passed on to customers in the form of improved real-time data analytics about deliveries, when appropriate. It has also helped to improve overall efficiencies, standards and safety, for example with an automatic low bridge detection warning system and best route calculations.

One operator found the technical information yielded by manufacturers' systems did not outweigh the advantages of viewing all its assets on one screen. Wrights of Twycross is a family business of some 200 employees running trucks and plant primarily in the water, waste and utilities sector. It recently decided to switch a mixed bag of inherited telematics systems on to the proprietary Ctrack system. Accounts manager Freddie Wright explains: "Twelve years ago the reason for having the systems in the first place was primarily vehicle tracking: knowing where the assets are and optimising their use in the day is key.

"As the systems have become more sophisticated, it's been useful to be able to drill down into the data and discover more about fuel efficiency and the way the vehicles are being driven. In addition, we can find out exactly what each might be doing at any time: driving, tipping or pumping. The manufacturers' own systems were very good. We got high-quality data direct from the vehicle's ECU about its mechanical condition. However, we didn't see it as much of an advantage, as defects were reported by drivers straight to our workshop before being noted through the telematics."

So, it seems that the data which is so valued by truck manufacturers is rather less valuable to those who generate it: the operators. TE