

# Divine intervention

No one doubts that diagnostics equipment is essential for modern HGVs and PSVs, but there are proprietary OEM systems and multi-brand alternatives. Toby Clark plugs in to assess the value

**W**hile chassis manufacturers' diagnostic kit is, almost by definition, the gold standard, multi-brand systems are more versatile. So says Dave Rees, technical director at Eclipse Automotive Technology, pointing to a system that not only covers trucks and buses, but also trailers, agricultural vehicles and off-highway plant. And he adds: "OEM tools all work in different ways - whereas a single system offers a consistent format."

Texa UK training manager Steve Ball agrees, but adds: "The biggest thing is Euro 6 coverage." Why? Quite simply, because independent workshops are now seeing Euro 6 vehicles coming in for maintenance and repair - not just inspection. So they need diagnostic software that is up to the job - which explains why developers have hundreds of engineers working to keep up.

That said, for Rees what matters are practical developments, such as wireless (Bluetooth and WiFi) that enable vehicle interfaces to 'talk' to diagnostic PCs. His Jaltest 8.1 Link multiplexer uses Bluetooth 4 to communicate with the Eclipse Testpad Extreme tablet PC at up to 100m. This allows what he describes



The next step could be augmented reality. At Automechanika 2014, Texa showed a system that projects diagnostic data directly into the glasses worn by a technician. It could go further, overlaying how to attach a component on the technician's view

as a hands-on approach. "You've got a truck in with an ABS sensor problem on the rear, for example. You're plugged in to the cab, but now you can go to the wheel, spin it and see all the data."

In a similar vein, Wabco Würth's W.Easy+ also incorporates a WLAN (wireless local area network), allowing several systems to be linked to a single computer. Clearly, there is significant potential for cost saving there.

So who - beyond independent workshops - is buying multi-brand equipment? Recovery firms are among their number, but also some franchise dealers that need non-franchise work to keep workshops busy. Additionally, some large fleets that buy into OEM diagnostics find themselves going for third party kit - particularly when 'customer versions' lack features available to dealers - such as recalibrating speed limiters, or reprogramming the gearbox ECU.

**TELEMATICS TAKEOVER**

What about telematics? With kit almost universal on large fleets, and connecting to the vehicles' CANbus, integration with diagnostics was bound to emerge. However, Eclipse's Rees is dismissive of some claims. He also notes that Jaltest's remote diagnostics works on its own or integrates via APIs to telematics systems.

The latter facility can be invaluable: If an error light comes on, you can check remotely whether the driver can carry on, or the truck needs urgent attention. "Also, the workshop can be advised that the vehicle is on its way so they are ready with the parts," adds Rees.

Interestingly, remote diagnosis also provides a ready platform for surveying a fleet, relating faults to particular models and/or operations. Meanwhile, Autocom's CDP+ and Wabco Würth's W.Easy+ offer alternative approaches, with flight recorders gathering test drive data, which can then be downloaded to

a PC for analysis. Texa has a similar new feature dubbed Test Drives, which can record 32 parameters for eight hours.

But the 'Swiss Army knife' approach to diagnostics is not the only way. Systems such as Knorr-Bremse's NEO Green offer the best available for its own braking and trailer systems. Other OEMs' diagnostics cover TPMS (tyre pressure management systems) and batteries. Rotronics' diagnostic chargers and testers, for example, have cut non-starts by 75%, according to managing

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*Michael White*

director Ken Clark. "Without correct diagnosis and proactive maintenance, a battery is likely to have its lifespan reduced by 50%," he warns - adding that his equipment can check both starter and alternator for parasitic drains.

What about training? Michael White, IMI product development manager, runs the working group managing content for the IRTE's irtec technician licensing scheme, and echoes views from across the industry. "Seeing and interpreting an error code is not enough. It gives you an indication of where the fault might be, but it could be another vehicle issue causing the symptom." He concedes that the more advanced equipment offers guided fault-finding, but he insists that technicians should follow procedures to get to the right diagnosis.

"Isolating a fault, rather than diving in and saying 'I know what this is because I've done one of these 10 times before', is important," says White. "It's rare to get two faults the same, so people need to change their mindsets and follow a

process." Technicians also need to make sure there isn't a fault that the customer hasn't raised. Also, rectifying faults is not the end: the final stage of any process should be confirming that it hasn't impacted any of the other systems.

What about that guided fault-finding? Eclipse's Rees says that, as well as the normal functions (reading and deleting error codes, and providing live data and test values), his system offers 'troubleshooting by symptom'. If a vehicle is producing white smoke, for instance, the tool offers technicians guidance, using 'fuzzy logic'. "It gives the error code, and links to a description of the components [wiring diagram, test voltages, etc], but it also gives you a step-by-step process to checking and repairing the fault."

Ultimately, however, much of a system's value depends on support and training. Eclipse, for example, splits its technical team into vehicle and IT support. Either can guide the user verbally, or use Eclipse Assist to make a direct connection to the PC. Texa, Eclipse and others also offer training on anything from general operation to programming trailer ECUs.

**MODERN SPANNERS**

How about irtec? Rees worries that the scheme only includes diagnostics explicitly at Master Technician level. He believes it should be introduced much earlier. "If you test an air dryer cartridge, you have to tell the vehicle you've done that. They let them use a spanner at 17... Diagnostics are modern spanners."

The only caveat: as Texa's Steve Ball says, technicians must be taught not to miss the basics. "If an apprentice is taught to look, listen and feel, it makes for a better diagnosis - rather than going straight for the diagnostic kit and missing the obvious. Often, you get a very basic fault causing really advanced fault codes." **TE**