

Fault-finding can feel like searching for a needle in a haystack, particularly when it involves electrics and electronics, with nothing visibly broken. And intermittent faults only serve to compound the issue, whatever you're trying to fix. Fortunately, computer-based diagnostic systems suppliers (own- and cross-brand) are tasked with keeping pace with the increasingly sophisticated computer networks and electronics proliferating throughout modern vehicles. So the question now is: how far can, or should, you and your technicians rely on these diagnostic tools?

Before continuing, it's worth acknowledging the 'they don't make them like they used to' brigade, who hanker after the old mechanical-only days. But clocks don't turn back and even the most wistful of mechanics surely recognises that computer-based systems have brought serious benefits to vehicle manufacturers, operators, the transport industry and the environment. The plain fact is that the UK's truck

Vehicle diagnostic equipment is only as good as the technician driving it. Robin Dickeson examines the issues in light of evolving technology, and operators' and workshops' desire for growth

RUBBISH IN, RUBBISH OUT

parc is smaller than it was, say 50 years ago, yet moves much more freight, consumes far less fuel and generates massively reduced emissions.

So, while there has been a near explosion in on-board vehicle electronics, our increasing reliance on sophisticated diagnostics systems to keep vehicles on the road and earning money is a price worth paying. That said, computers can seem fallible and diagnostic systems don't always give the answers we expect. When that happens, it's not always easy to tell if there is a problem with the computer, us, or both. Maybe we should also recognise the importance of training and interpretation. Computer help desks have a useful term for those that don't: PICNIC (problem in chair, not in computer).

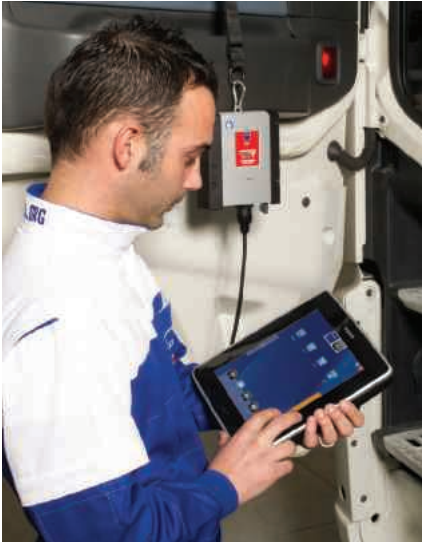
"The biggest problem is knowledge," comments Dave Tempest, UK managing director at Texa, one of



Europe's largest suppliers of cross-brand commercial vehicle diagnostic equipment. "We see technicians trying to repair systems they don't understand and then complaining that the diagnostics tool didn't fix the problem," he explains, adding that this demonstrates an all too common misunderstanding over the role and scope of diagnostics.

Most systems are effectively 'electronic windows' designed to reveal what is going on when targeted on, for instance, an electronic engine control unit (ECU). If you know how to use them and employ sensible procedures, they will tell you what you need to do and indicate the fault, but they won't fix the problem. "You still have to get the spanners out and do something," agrees Tempest.

He believes that some in the road transport industry have historically failed to invest in adequate



training. And he should know: his firm not only builds the kit, but also offers diagnostic training, so he sees the problem from the sharp end. However, things are getting better, he says. "We're flat out on training, taking bookings for months ahead, much of it for the truck and bus industry."

Except that's not the case everywhere: Tempest says experience indicates that franchised dealer technicians generally do a better job, particularly when working on their own vehicles. "Technicians from fleet and mixed workshops tend to have more generic, rather than system-specific, experience," he observes.

All of which leads to a clear paradox. Dealers want more aftersales work, which often means operating outside their franchise umbrellas. Also, many fleets run more than one make, so again the pressure is on to work across brands. But that may mean working closer to the edge, if not outside, their comfort and competence zones. It will probably require different diagnostic equipment, too. And that entails additional acquisition costs, as well as the ongoing burden of training – unless you go the cross-brand diagnostics route, as per Texa.

Training and experience

Most truck makers offer dealers leased packages to cover their diagnostic tools, usually with options to buy outright. The vast majority lease the kit, preferring the inclusive software updating built in. So far, so good, and dealer agreements cover not just the diagnostic kit, but also the associated mandatory training. However, one truck or van brand's

diagnostics rarely reaches to cover a competitor's. Each takes a different approach to its engineering: indeed, cynics might suggest they go to some lengths to protect their dealers' aftermarkets.

Putting such thoughts aside, though, European law is coming to the rescue, at least in part – dictating, for example that much previously protected maintenance system data be made available. That's enshrined in Euro 6 and Type Approval legislation, for instance, both of which demand that truck operating information be available to third parties. Part of the reasoning is to ensure that a truck's emissions stay within limits over time, rather than just as they leave the forecourt. But, as with Block Exemption law a few years ago, the goal is also to stimulate competition.

However, even when armed with diagnostic data, there are still the training, experience and competence issues. Tony Pain, marketing director at DAF Trucks, is one among many who believes that the sophistication of diagnostic systems means that highly trained CANbus diagnostic technicians, wielding properly updated diagnostic tools, are now, more than ever before, vital to any truck, bus or trailer maintenance team.

And it's a moving target. As Dave Wadsworth, global commercial vehicle channel manager at Delphi Product and Service Solutions, says: "Technologies will continue to advance – from hybrids to electric vehicles to truck engines running on alternative fuels. Fleet engineers and technicians will need to know how to diagnose and repair all these systems. Also, the interconnectivity of electronics and ECUs throughout vehicles means they need a broader system understanding when making repairs."

His point: today's vehicles can have up to 50 computers, all communicating with each other. They manage interconnected systems, including the driveline, brakes and navigation, as well as lighting, ventilation etc. "Technicians must understand how these systems interact," states Wadsworth.

So Delphi, like most others, recommends frequent training updates, such that technicians can get the best out of new diagnostics functionality. All software upgrades are designed to help technicians make easier, faster diagnoses and repairs on vehicles, as they themselves are updated or new ranges are added, but they need to know how to use them.

So the bottom line: how far you or your technicians rely on diagnostic tools is, of course, up to you. But when the tool delivers a surprising, or even an expensive, answer, remember that it is a computer. And like all computers, it is only as good as the information it is given, which, in turn is about the person driving it. Remember: 'rubbish in, rubbish out'. So, before you doubt the diagnostics kit, check that it is up to date and that its operator is, too. There are no substitutes for training and experience. As Tempest puts it: "Any tool is only as good as the lad driving it." 